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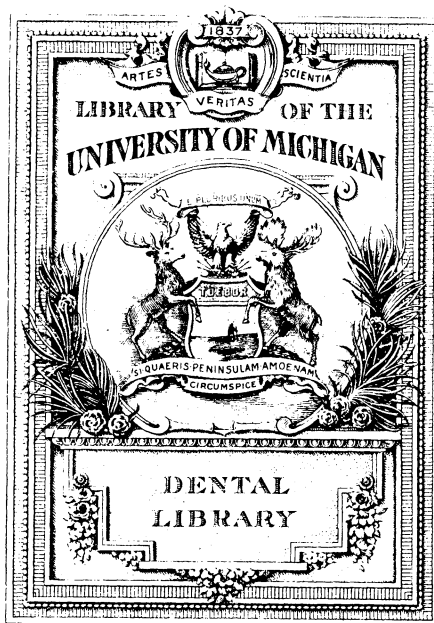
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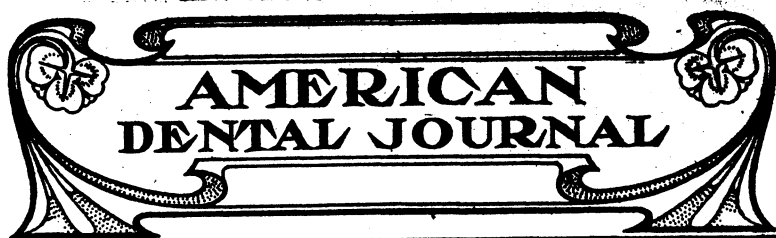
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LISTERINE TOOTH POWDER

A fourth of a century of continued, satisfactory employment of Listerine has demonstrated to many who have used it during this entire period, that Listerine is the best antiseptic for daily employment in the care and preservation of the teeth. Listerine Tooth Powder, then, is not intended to supplant Listerine in the daily toilet of the teeth, but is offered in response to a popular demand for a frictionary dentifrice to be used in conjunction with this well-known and time-tried antiseptic.

Listerine Tooth Powder is composed of precipitated carbonate of calcium, carbonate of magnesium, oil of cananga, and the antiseptic constituents of Listerine.

The simplicity of its formula, in itself commends the powder. The English precipitated chalk and magnesia are the finest obtainable, and absolutely free from grit; the oil of cananga possesses properties opposed to inflammatory conditions of the gums, and together with the antiseptic constituents of Listerine, adds to the desirable qualities of the product. However, it is to the list of articles which have been omitted from the formula that special attention is directed, and the manufacturers believe the profession will agree that the absence of pumice stone, cuttlefish bone or other abrasive substances, and of sugar, orris root or superficial perfume of any character (the usual ingredients of tooth powders and liable in themselves to fermentative action in the mouth), is a distinct advantage.

Lambert Pharmacal Co.

St. Louis, U. S. A.

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PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

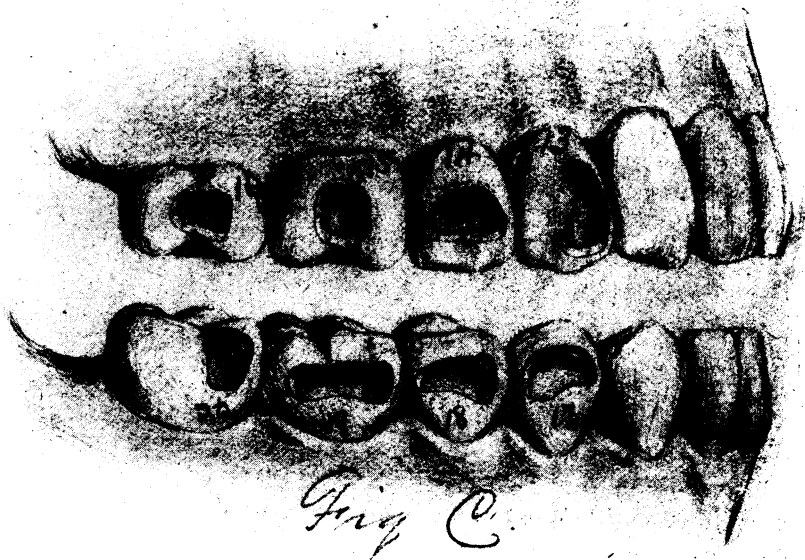
PORCELAIN.

T. ELHANAN POWELL, D. D. S.

CHAPTER VI.

The second class of cavities to be considered is the labio-gingival.

These are among the most frequent to demand the use of porcelain; they occur in mouths where an acid condition is present and their appearance would indicate erosion rather than caries.

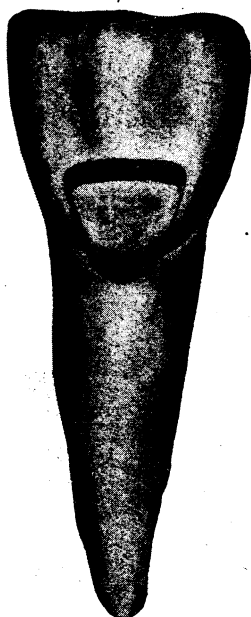


These cavities have been and are a great bugbear to both the dentist and the patient. The teeth are usually excessively sensitive and the cavity extends close to and sometimes under the gum.

It has been customary to fill these cavities with gold, which method necessitated the adjustment of the rubber dam with the accompanying pain and distress to the patient.

With porcelain we do away with this discomfort and attain a very much more artistic effect.

Of course, it would be difficult to work in a bloody field with porcelain; so when the cavity extends beneath the gum, in order that we may have a clear field the cavity must be packed with gutta percha; a sufficient amount being used to force the gum out of and above the cavity.



Cork-shape Inlay Bur, made in different sizes.

Fig. B.

For several days this should remain in the cavity to accomplish the desired result.

If the cavity is shallow so that the gutta percha may not be retained, eversion of the gum may be obtained by forcing cotton tightly against the gum and into the cavity.

Use a silk floss around the tooth to retain the cotton in position.

This process continue until a clear view of the cavity and the tooth for some distance above is obtained.

In Fig. B is shown a labio-gingival cavity extended into the cementum, which, of course, necessitated the forcing away of the gum for a considerable extent. One of the great beauties of porcelain in a case of this kind is the extent to which it is tolerated by soft tissues, the gum coming down over an inlay after it is set and giving no evidence of having been disturbed.

Notice the preparation of this cavity: how broad it is labio-incisally, sloping gradually to the gingival, leaving no doubt when the inlay is finished as to the position it shall occupy in being set.

Very often the cavity will have to be extended mesio-distally to include all of the affected surface. In cases of this kind the cavity should be formed into an oblong or some other irregular shape to simplify the sitting.

In Fig. C I have shown a number of buccal cavities in bicusps and molars which I shall treat here in connection with labio-gingival cavities, instead of devoting to them a separate paper.

In these cavities a sufficient variety of forms are shown to give the student the idea of irregularity in cavity preparation.

Decay in its progress never follows symmetrical lines, but leaves always irregular or even zigzag outlines; so that, in preparation of cavities the symmetry of the same depends upon the care and artistic ability of the dentist.

Usually, labio-gingival cavities should be outlined similarly to those indicated in Fig. C, and I do not believe a detailed description of how these cavities are prepared is necessary, since they plainly tell their own story. I should, however, like to invite the attention of any reader to the dotted lines toward the gingival of each cavity, indicating the *undercut*, placed in direct apposition to the force of mastication; and the *slant* of the cavity *occlusally* permits the dropping of the inlay into proper position.

I use this method in preparing cavities for labio-gingival and buccal fillings, whether I use porcelain or gold, and complaints on account of the dropping out of fillings have been few indeed.

(To be Continued.)

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.

CLINICAL PROFESSOR OF OPERATIVE DENTISTRY, CHICAGO COLLEGE OF
DENTAL SURGERY.

SOMETHING MORE ABOUT ARTIFICIAL ENAMEL.

As time goes on there is something more to be noted and said about artificial enamel, that substance classed as a silicate cement which has so recently been introduced as a filling material for the teeth.

Several makes of silicate cements have been before the dentists of this country, all claiming excellent virtues or qualities in one way and another, and especially the essential one of being durable as well as translucent and life-like. Some of these claims have not been borne out when put to practical tests, the result being that a prejudice has been aroused with many against the whole class, when there certainly are rare virtues in some of them. The one that the writer has had most experience with, and the only one that he has had success with, as yet, is called artificial enamel (Ascher's) and the name is very aptly applied.

This particular product has been before the dental profession of Europe, or some parts of it, for about five years; but, except in the hands of a very few, perhaps, it has not been before the profession here and subject to practical tests and usage much more than two years.

Two years in the hands of a large number of operators has shown something encouraging, if it has not been all that was hoped for, or could be wished for. It has proved that the new material is a valuable adjunct in the way of cement, if it may not yet be accepted as an ideal substance with reasonable claims of durability as a filling for a large variety of cavities.

The testimony of a large number of users would indicate that it can be relied upon for perhaps more than average durability; and, with a more intimate knowledge of its peculiarities and the essential steps in compounding the two ingredients, liquid and powder, and

also of manipulative precautions, the operator may find much closer approximation to the looked-for ideal.

If a filling material in practical use in the mouth or in many mouths stands up reliably and without apparent waste or disintegration for two years, it is quite reasonable to expect it to do service for another two years. It should show clear evidence if any disintegration is under way; finding none after such a time, the "table of expectation" goes up several points.

Remembering the varied results of mixing oxy-phosphate cements from the same "batch," and using similar proportions as far as could be observed, and remembering that artificial enamel is a cement, it would not be strange if some, out of a number of fillings, should prove defective and soon show signs of breaking down. But that need not imply anything against the material *per se*, but simply that the mixing or manipulation had not been properly done in one or several particulars, possibly. One may so manipulate gold or amalgam that fillings are faulty and fail.

In making porcelain inlays most operators are unfortunate enough to have some of them come out, through some fault in the mix of cement which fails to hold. Not infrequently another mix from the same material and seemingly under exactly like condition, will hold the reset inlay indefinitely. Occasional failures to make them stay does not discountenance inlay work; and neither should some failures in artificial enamel discourage an operator as to further effort along that line, with better understanding from experience.

Owing to lack of knowledge of exact proportions, or the impracticability of getting those exact proportions, if we knew them, and the several conditions that have to be taken into account in mixing cements of any kind, such as time in mixing and time in handling after the mix (and before crystallization demands no further interference), temperature and perhaps humidity of the atmosphere, we can attain *perfect* results only by accident, but may approximate closely by experience and observation. Only by this means, coupled with the data provided by those who have gone before, can near perfection be attained.

In the first experiments with Ascher's enamel one would do well first to read the latest instructions—the later ones differing considerably from the first that accompanied the material—the result of

greater experience—and then fill cavities in teeth out of the mouth, although the conditions of temperature are different, which should perhaps be taken into account. The producer of the enamel calls attention to this and says experiments out of the mouth should be brought up to the normal temperature of the body—or in round figures to 100° F.—and be kept dry until crystallization has been effected.

But the unexperienced operator can learn many of the peculiarities of the enamel as to mixing and filling cavities out of the mouth without concerning himself about the temperature, except to remember that any cement will crystallize quicker, if that is desired, under warm instruments.

It is perhaps more difficult to give all the intimate and peculiar directions, how to handle the enamel in question in a variety of cavities, than almost any other material; and while it is a cement, it is different in many ways from any other, or from oxy-phosphate cements. In one particular, Ascher's enamel may be manipulated, within limits, up to the very time it becomes too hard to do so. In fact, it is essential to do the final finishing and burning with oiled burnishers just before it becomes too hard to yield.

If possible, a filling should be molded to the form desired, after first forcing the material to sure contact with all the cavity walls, under cuts and margins, and then skilfully trimmed to remove all surplus overlapping beyond margins. This may be done when material is yet soft by the instrument used in putting it to place, or another if more convenient; but as the contouring progresses and the filling growing harder there will be more trimming to be done that can only be done satisfactorily with a thin, long-pointed sharp blade, (oiled) like a slender lancet blade. If the filling is kept level with margins in this way and the burnishing with oiled burnishers as per instructions (which, by the way, must be done without much delay when the material is hardening rapidly), no disking or stripping will be necessary, and this is the most desirable way. The use of grit disks and strips should be avoided if possible for the reason that their use leaves a scratched and undesirable surface; hard to bring later to a high polish, which is essential if the best appearance in translucency and in shade are to be attained. High polish also stands for more certain durability. As to shades, one may have selected

the best to correspond with the particular tooth involved and then spoil the effect by disking or stripping with a gritty disk or strip, unless a high smooth polish can be secured after. This is not easy; for when this enamel is once hard it is very hard, and in the nature of it does not then take a fine polish without a long, tedious effort, depending somewhat upon how hard it has become when the polishing is undertaken. There is a time before it is absolutely hard (but it don't tarry very long) when it may be cut down with disks and strips (always oiled with vaseline) and then polished with the highly polished celluloid or terra plastica strips and disks. But at that particular period of hardness, or lack of it, it is an easy matter to allow grit disks and strips to cut in too deep and destroy the contour one has taken pains to perfect; and at the same time it is too hard to do any further modeling to bring back to shape. It is altogether desirable, as before said, to do all finishing *without* the use of the usual grit disks and strips, no matter how fine. When the material is once too hard the celluloid disks and strips are of little use in getting a high polished surface.

In a proximal filling the celluloid high polished strips serve as a matrix and leave a surface equal to their own on the filling; but unless this matrix is held tight to the margins of the cavity, it will be easily understood that the material will squeeze out between the margins of cavity and leave an overlap, which should be removed; and sometimes this overlap blends so perfectly with the tooth enamel that it is difficult to detect. If left, it would in due time break away and leave the filling standing out beyond the cavity margin. When this has occurred, stripping with sharp strips may be necessary—or disking—at another time, of course, doing the final finish as best one can with the finest—always oiled.

It is often found that any burnisher—not metallic—is too large and clumsy to reach certain parts, and steel may be used by interposing the end of one of those thin flexible celluloid strips, thus keeping the metal from contact with the filling, but permitting of burnishing and modeling with a high polished surface against the filling—again, always oiled enough to prevent the material from sticking.

When these strips are used as a matrix they should be just slightly oiled to prevent material from sticking.

Instead of separating teeth where, for instance, there is to be considerable contour between two bicuspid, or a bicuspid and molar, to allow for matrix, and coming back to contact after matrix is removed, the writer does as he often has done with amalgam when conditions will permit, and that is, pack against a matrix and then before material is hard slide out the matrix and with force occlusally applied and the use of burnishers to assist in modelling, if need be, bring about a proper contact with the neighboring tooth, or even between two proximating fillings put in at the same time.

Separating teeth is a very unpleasant experience for the patient, if not extremely painful; and if the work can be accomplished properly without, it certainly should be done, and it can be in many instances.

With the enamel it is easy, comparatively, yet requiring some skill and judgment. Slightly oil and place in the matrix. It may be held to place by any one of several devices for the purpose, perhaps. Or it may be just slipped in and left until the material is packed in, the latter being modeled by bending the strip around on either side with a burnisher. Now, if the enamel is hardened up some, the matrix may be pushed out of the way and the overlapping surplus removed, when matrix is again pressed around the filling and the surplus, if any, removed again. Or the matrix may be slipped out entirely and modeling and trimming done, and then matrix may be replaced, and pressed again around the filling. Now, before filling becomes too hard attend to the occlusal contouring, removing the overlap into the occlusal irregularities with sharp spoon and other excavators, and finally, before filling is too hard, remove the matrix and exert a pressure occlusally with a suitable ball or oval burnisher, to cause the filling to bulge out to fill the space that was occupied by the matrix strip. If this is done at the right time the contact will be correctly made and contour be entirely symmetrical, or easily regulated with the proper burnisher.

Speaking of these contour fillings of enamel in both bicuspid and molars, the writer has quite a number of large ones under observation and some have been fully two years in place without signs of giving way from any cause. In some instances, where a failure has occurred, the fault has undoubtedly been in mixing or subsequent

manipulation. Failure from such causes is not long in becoming manifest, and, with the writer, the second filling has proven satisfactory.

As before observed, if these fillings stand up to all requirements for two years, they are good fillings, if they then had to be done over or repaired. If they are intact it is fair to suppose they may go two years more. In fact, if they are intact for two years, there is good reason to suppose they might last ten years, or long enough to be considered as much permanent work as some other work so classed.

And while they remain in the tooth they do not leak, but stick to the walls and preserve. If there is any shrinkage of this material, claimed by some, it simply shrinks (slightly) upon itself and never cleaves from the wall of the tooth, leaving a ditch, as shrinking amalgam does; at least, so far as the observation of the writer goes.

A word about shades. The shade guide provided with the material is far from being satisfactory. A shade guide should be of some such a nature as the guides for porcelain, easy to place in contact with the tooth for close comparison. And further, some little idea might be given in instructions as to combining shades, though it must of course depend even then largely on the artistic eye or sense of the operator, as does the selection with the guide. One thing may be remarked with some certainty: that most operators will make the mistake oftener of selecting a shade too light for the case than too dark. Numbers two and four and a combination of these two shades are perhaps more often demanded than any others, or a pearl gray and a dark yellow.

The fine artistic ability or sense of an operator may be brought out by mixing two colors (separately), as a suitable yellow for the neck and a pearl gray for the incisal third or half, and gradual blending of the two between. The blend may be made very satisfactorily in the following manner: While the operator mixes one color his assistant should mix the other. When ready the yellow (or cervical) would be placed first in the proper proportion; then the other should be placed quickly and with a little dragging of the two shades back and forth a little at the joining of the two (only while material is soft) the blend may be made very natural.

Matching up the shades of an incisor, for instance, or any exposed tooth, may be done to the greatest perfection. The writer has

done it in case of incisors so that no one could detect repair, not even dentists asked to make the examination. In other cases, not so perfect as that just stated, the match has yet been so close that it would escape the observation of any one without a very close examination intent on discovery. These fine matchings and shadings may be undone if, as has before been stated, finish is attempted by the use of even very fine cuttle fish disks; therefore, the operator should aim to so move and manipulate and trim with a sharp oiled blade, cutting always toward the cavity margins, followed by smoothing with suitable burnishers. Use steel burnisher with the celluloid strip held in left hand interposed between instrument and filling.

Oil (vaseline) should be used at the right time and place, but not in any way to become incorporated in the filling material before ready to surface. Oil no instrument used in packing material into cavity; nor until ready to smooth up the surface after modeling and shaping.

(To be continued.)

DENTAL PATHOLOGY.

BY GEO. W. COOK, B. S., D. D. S., CHICAGO, ILL.,
DEAN OF DENTAL DEPARTMENT, UNIVERSITY OF ILLINOIS; PROFESSOR
OF BACTERIOLOGY AND PATHOLOGY, UNIVERSITY OF ILLINOIS.

The discussion of tissue changes, from what would be considered a normal functional activity to that of abnormal one, is a phase of biological science that is little known of other than being classed under the head of metabolism. When we speak of metabolism this means life itself, because without the proper quantity and quality of proteids, carbohydrates and fats, properly disassociated into the division minute enough to be carried throughout the entire body and deposited in the respective tissues, it is impossible to have living substance. There are a large number of things that may interfere with the proper metabolism of the body, and, as we have previously stated, certain tissue changes will be brought about that manifest themselves in what we designate as pathological changes.

We have called attention to a great variety of infiltrations and chemical changes that take place in tissues under various heads, according to the substances that manifest themselves in a particular locality, namely, such as mucoid degeneration, colloid degeneration, calcific degeneration, amyloid degeneration, all of which are designated under their respective heads. Pigmentation is the last in the list to be discussed. We stated that melanin is the substance most commonly found in pigmentation of tissue. We find in the skin, as structurally built up in man and vertebræ, many different kinds of substances that are seldom, if ever, found in other tissue in a normal state. Among these structures are the hair, nails, teeth, horns and hoofs of animals; this structure is usually called the horny epithelium. The cells of the horny structure show a difference in resistance to chemical reagents, somewhat in accordance with the age of the structure itself. The younger of this horny structure is the less resistant to alkalies, and with advanced age the caustic alkalies act less and less upon this structure. Keratin is found in horny structure mixed with other substances, from which it is not easily separated. The inorganic salts are the hardest to separate from keratin. It has

been found that on burning hair the residue that is left in the form of ash has the greatest affinity for keratin.

In this connection it may be well to state that this same substance, keratin, or rather the tissue that contains keratin, is the tissue that is most likely to take on pigmentation, or in other words, that has an affinity for melanin. The pigmentation of tissue as it appears in degenerative structure is a phenomena, like many other degenerations of tissue, that is rather difficult to properly explain. There are some skin affections which are not necessarily a degeneration of tissue cells, but have inherited into them a predisposing condition, which, when exposed to the sunlight, cause small, round spots on the surface of the skin known as freckles (lentigo). This is by no means a pathological change, nor does it have a pathological significance in any respect. There are, however, under certain conditions, so-called blotches on the forehead and other parts of the face that are indicative of pregnancy or some ovarian difficulty, and when these conditions are removed these so-called blotches (chloasma) disappear, which is an indication that they are the result of some pathological processes, or some interference with the metabolism of the body.

Melanism is one of the conditions in which there is extensive pigmentation of the skin, which may possibly be inherited or acquired. In Addison's disease we have extensive pigmentation of the skin that is truly of an acquired character. In pigmentation of the skin, let it be of a physiologic or pathologic condition, it is the deposition of a proteid-like body, as we have just above mentioned, like melanin. There is however, a condition that is quite opposite to that of pigmentation which is called vitiligo or leukoderma. This is more often an inherited than an acquired condition and occurs as white spots on the skin. It seems to be a condition of the cellular structure whereby it fails to take into the cellular activity any of the pigmentation of the skin. If in these white spots upon the surface of the skin or body there be any hair there is a complete failure of the hair to take up any of the pigmentation.

Albinism is a congenital condition similar to the one above mentioned, with the exceptions that in the so-called leukoderma patches there is absent this pigmentation only in circumscribed area, while in albinism we have complete absence all over the body. In this last named condition it is presumably the result of some interference of

the nervous mechanism of the body in which all pigment is absent from the eyes, nails, hair, and in fact the entire body. The irides pink is a characteristic manifestation of this condition. The eyes are extremely sensitive to light, a condition that is truly characteristic of albinism, and may occur in the lower animals as well as in man.

It is believed that in the majority of instances pigmentation of the skin and mucous membrane, with but few exceptions, is the result of the body's own physiological activities. However, we may say that there are conditions in which certain pigmentation is the result of an introduction into the tissue cells, a substance that is capable of combining with a certain part of the protoplasmia of the cell and there remaining as an intricate part of the structure. This is extraordinarily well marked in the cases of tattoo-markings on the surface of the body. This is done by the introduction of India ink or carmine which is introduced through the pricking of a needle in the skin. This pigmentation seems to form a staple chemical combination with the rete mucosum. This condition may be acted upon to an extent by the leucocytes taking up a part of the pigment and carrying it to the lymphatic circulation, or a portion of it may be desquamated with the outgrowing epithelium structure, but sufficient quantity remains perhaps throughout the life of the individual to easily make out the original designs that were placed in the skin.

There is another pigmentation of the surface of the body that is but little seen at the present time, with the exception of short durations, and that is argyria, which is the deposition of silver salts in the skin. The time was when nitrate of silver was administered for the treatment of epilepsy. Minute doses of compounds of silver were introduced into the body covering sometimes sufficient period to cause a deposition or the precipitation of chlorides in the skin. The skin assumes a grayish hue and many times remains that color throughout life. It has been found on microscopic examination of the tissues of the liver, spleen and kidneys that the silver salts are deposited in the form of granules in the cells of these organs. It is a well known chemical fact that in the majority of instances the salts of the heavy metals when deposited in the tissue exist there principally as a chloride. But when silver salts come in contact with the dentine of a tooth and causes discoloration, that we so frequently see when the application of nitrate of silver is made to the eroded surfaces of teeth,

it exists there in the majority of cases as a sulphate. This has but little to do with the question under consideration at the present time, but is thrown in as a suggestion to the fact that the proteid combination as appears in the active tissue substances is ordinarily a chloride, but in the cases of contact with tooth substance it almost invariably is a sulphide or a sulphate.

The pigmentation of tissue as found in the skin and mucous membrane, as we have previously stated, is the result of the deposition of melanin, and in the majority of instances is the result of some pathological results taking place in that particular tissue or in some remote organs or tissues of the body and has been transplanted to become localized in certain tissue. The late C. R. Taylor called my attention to an interesting case of pigmentation of the mucous membrane, in which the appearance of the tissues was very much like that found in a melanotic sarcoma; however, there were no physical manifestations of a pathological lesion. In this case referred to there had from time to time appeared spots of a dark brown appearance on the surface of the mucous membrane in various localities in the mouth. The first that had been noticed of these particular spots was one appearing in the gum tissue on the lower central incisor. Its location was a slight distance, about two lines from the gingival margin of the gum tissue, and extending well down into the softer and more flexible part of the mucous membrane. There seemed to be a slight thickening of the mucous membrane and especially the upper border of the discolored line. The mucous membrane in the locality of this discolored patch, when the finger was passed over it, had very much the same general characteristics of leukoplakia, though it will be remembered that this last named condition is one in which the tissue has a white appearance. These patches of discoloration must not be mistaken for that blue spongy appearance of the gums around the teeth affected with pyorrhea. The condition under discussion is one of pigmentation of the cellular structure, while the other is a simple passive hyperæmia in which the venous blood vessels are somewhat dilated, due in the majority of instances to an infection of that part of the mucous membrane.

The conditions of warts and molds that appear on the skin and more or less highly pigmented, are looked upon in the majority of instances with suspicion, and some authors tell us that in these spots

is where we frequently have developed a cancerous growth. I recall some years ago a case that came under my observation in which there was developed a carcinomatous growth in a pigmented spot on the upper lip. It had been there for many years and the patient was of the opinion that it was due to a lower lateral incisor that had been forced out of line and occluded with the incisal edge of the upper tooth in a way in which the lip sometimes caught between these two teeth, and on one occasion it had bitten the lip until it was quite sore. Then it became discolored and remained this way for a number of years. I saw this at a time before when there wasn't any appearance of growth, but some five or six years later it developed into a well defined carcinomatous growth. I think it is well to bear in mind such conditions and guard them very closely and as soon as any growth manifests itself it should at once be removed. This pigmentation, as we have previously stated, is beyond any question of doubt the result of some pathological change in the tissue structure. It may not be of any very grave importance, while on the other hand it may be of very serious importance.

The ordinary pigmentation as found in the skin and oral mucous membrane seems to have but little importance under ordinary circumstances. The frequent appearance of these pigmented spots occur in animals, and especially dogs, in the skin and mucous surface. From a purely biological standpoint they have a fundamental bearing on the coloring matter of the hair, hoofs and horns of animals, in the feathers of birds, and various insects, and in those cases are purely physiological. They develop under the most favorable circumstances sometimes in man, but only as pathological conditions. It has been supposed, and in fact was found by various investigators, to exist in combination in the iron of the blood. The melanin found in melanotic sarcoma of the horse is soluble with considerable difficulty in alkalies, while the pigment of the hair is not so soluble in alkalies. It was supposed that the combination of melanin was brought about through the intermediate action of sulphur, but investigations have demonstrated in some instances that the melanin isolated was not combined with either iron or sulphur. However, in some cases the presence of these two elements was found in small traces, while melanotic substance of sarcoma and the choroid pigment have been found entirely free from sulphur (Landolt and others).

From all the investigations that I have been able to find there is a strong belief that there are a number of varieties of melanin and that each has a particular affinity according to certain biological phenomena for iron and sulphur, while others do not combine with it in the sense of becoming a chemical combination. Certain diseased conditions bring about many peculiar phenomena that have not been worked out in a systematic manner. But I believe the time is not far distant when it will be found that these pigmented spots in the oral mucous membrane will have a certain pathological significance that will be of importance to the dental surgeon. Suffice it to say in this connection that it is important that we note all points that deviate from truly a physiological appearance of the mucous membrane, regardless of where they may appear or how long they have been there, because they have a significance of certain inherited tendencies to abnormality of either functional or physical appearance.

(To be continued.)

ORIGINAL CONTRIBUTIONS

TOOTHsome TOPICS.

THE BIRTH OF AN INLAY.

The inlay is not such a recent feature in dentistry as some might think.

I would not presume to say I was the father of the first; but I was the father of one many years ago.

I might say I *am* the father, for it still lives.

There wasn't, at that time, any craze or fad about inlays. I don't know that I had ever heard of one. I was just an ordinary all-around dentist in *those days*—a common slugger of gold.

It must have been about 1890 or 1891, and I had for a patient one of the most nervous and restless women that ever got into a dentist's chair.

The cavity in hand was the disto-occlusal of a right superior bicuspid, and I earned \$100 in the preparation of it; say nothing about filling it with gold. But I did not get the hundred.

In fact I quit the preparation before I had got it quite as I wanted it, on account of the early beginning and ever increasing kicks and spasms of thrashing-around of my patient, oft repeated with verbal accompaniment—"Good Lord! you haven't got to do much of that, have you?"—"Oh, glory! that's worse yet."—"Again?—Wuh!"—"Will you *ever* get through boring?"—"No, it don't hurt so much, but it makes me nervous."—"Wooooff! it sets me all on edge. I'd rather have the old tooth out. Wooodooff!!!"

Fellow sufferer (dentist), can you imagine my trial? Maybe *you* never got a lemon in your chair. Well, I got mine all right. I'm not sure but it was a lime. At intervals I stepped into my laboratory to wipe away the perspiration, and indulge in silent prayer. Sometimes it was muttered indistinctly—but I understood it all right.

Finally I got to a point where I said to myself, "It isn't as well prepared as I would like, but I guess it will do. It has *got to do*."

Of course *you* wouldn't quit like that and never did; but *you* never had that patient.

Anyway, I felt like slugging something, and I began slugging gold. The patient thought it an agreeable change—at first; but as time went on she got nervous again, and began to sigh and flinch before the blow came and groan afterward. I'd carry a piece of gold up there and be just on the point of nailing it fast, when she'd flinch and I'd miss and the gold drop. That happened about 97 times, and about that many times I bit my tongue and kept serene.

Then she soon began to move her head every time I reached for gold, and I'd have to readjust it before I could place the pellet. Seventy-nine times I took her head off the horn and gently placed it in the center of the headrest. To be candid, I felt like slamming it.

Fellow sufferer (dentist), did you ever—? Oh, well, never mind. But you've had 'em keep asking every three minutes by the clock: "Aren't you nearly done, doctor?"—"How much longer will you be?"—"My! if I'd known it was going to take so long I'd never have had it done."—"How much more?"

Well, the hours wore on—yes, hours. It took me over two hours to fill that hole up, not to mention the prior preparation; but at last it was ready to finish up. Then my frazzled patient drew a long breath, raised up and thanked God; but not His agent who had put some life blood into the work. I didn't worry over that, but mentally and fervently echoed the sentiment.

But of course I couldn't leave it just that way; so, in mellifluent tones—oh, I was mellifluous through it all, though of a waspish kind as far as my innermost feelings dare feel—I remarked that we'd just finish it up the least possible and then do the rest next time.

If she had said, "They ain't goin' to be no next time," it wouldn't have surprised me much. Anyway, I hazarded a throw on it, and it was well I did, for I soon discovered on getting to work that there had *got* to be a next time for someone if not for me. A few strokes around the filling showed me it was a *removable* filling. It wouldn't drop right out, but I pushed it out.

And then I pushed it back and retired to my laboratory to again wipe away the perspiration and—think, and think quick. Not for the hundred spot cash—that I earned in the preparation of cavity—would I have told my lady just *then* that the work was all a failure;

and so it was up to me to in some way pass it along until the next day at least, when I might have a chance to side step a little and say: "Oh, you must have bitten on a *crust* or something. Of course, if you did that before it was finished, why——"

Just then my eyes fell on a package of quick-setting cement, and I never mixed any quicker in my life. Gathering it on a toothpick and concealing it in the palm of my left hand, I went back to the chair with an air of knowing just what move to make next without hesitation. And I did know. I pushed the filling out and the cement in, and then pushed back the filling; but it stuck half way.

Then reaching for my automatic plugger, I said: "Have got to condense this just a very little in one place." There was a groan, but a couple of taps sent it home.

I then drew a bit of thread through behind, wedging the filling in. This enabled me to cut it down occlusally, to be safe as to occlusion, and to disk the sides some, and burnish margins. With a warm burnisher I hastened the setting of cement and at the same time cleaned away the surplus.

Leaving a bit of the thread wedge in, I removed dam, and with a few happy remarks dismissed patient until next day.

Whether I slept well or had troubled dreams that night I do not remember, but as the hour approached next day I was troubled. Still I thought she'd come back fresh and could stand the shock I felt was in store better than when she was all frazzled out.

She was cheery when she came and had forgotten much, and maybe forgiven; but how would it be when——

Well, I cautiously tried the filling and its firmness decided me to put off the confession as long as possible; so I set to work with disks, strips and trimmers, looking for disaster every minute.

At length I found the filling, looking like the real thing, but I tried it again. It was there. Had her bite something hard on it, and it was there.

Now, what is the use, said I to myself, of bringing on trouble before its time; so the woman went away very well pleased and proud, and I was saved humiliation, for a time at least. It hasn't brought humiliation yet, and I've seen it often and recently.

It wasn't a failure, but the birth of an inlay. Through hours of confinement, labor and travail, a decidedly fine golden inlay was

born. It weighed less than a pound. I was the doctor and accoucheur, and—well, am the proud father as well.

The child is now about 17 years old and healthy.

It bids fair to live—well, until pyorrhoea gets into the neighborhood, or death takes it as a shining mark to the graveyard. And I think it will be on deck at the resurrection.

I'm still making inlays, but not the same way. That was a good way—anyway, a good inlay—but it was a little teejous. Me for the cast inlay in future. It is a filling of high caste, and don't frazzle your patient quite so much.

(Topics every month.)

A COMPARATIVE STUDY OF THE PHYSIOLOGICAL ACTION OF ANESTHETICS.

BY C. M. PADEN, M. D., D. D. S., CHICAGO, ILL.

PART. FOUR.

In the last article we saw the effect of somnoform on the blood-pressure in dogs which had been anesthetized for varying periods of time.

When the animal was anesthetized and the femoral artery cut, we found, in all our experiments, the blood-pressure to be about normal.

Few variations are caused by the continued use of somnoform unless the anesthetic is pushed to the limit. Even when other anesthetics or special nerve stimulation have been used with effect on the blood-pressure, it speedily returns to normal when they are removed and pure somnoform is continued. But the man who is to administer an anesthetic to a human being and thereby assume responsibility for that life, wants something more than experiments on animals, however instructive these may be. He wants to know the details of its action on human beings.

Through the genius of Professor Dugeon it has become possible to get at these facts with almost as much exactness as with the animals. The performing of these experiments on people constituted the con-

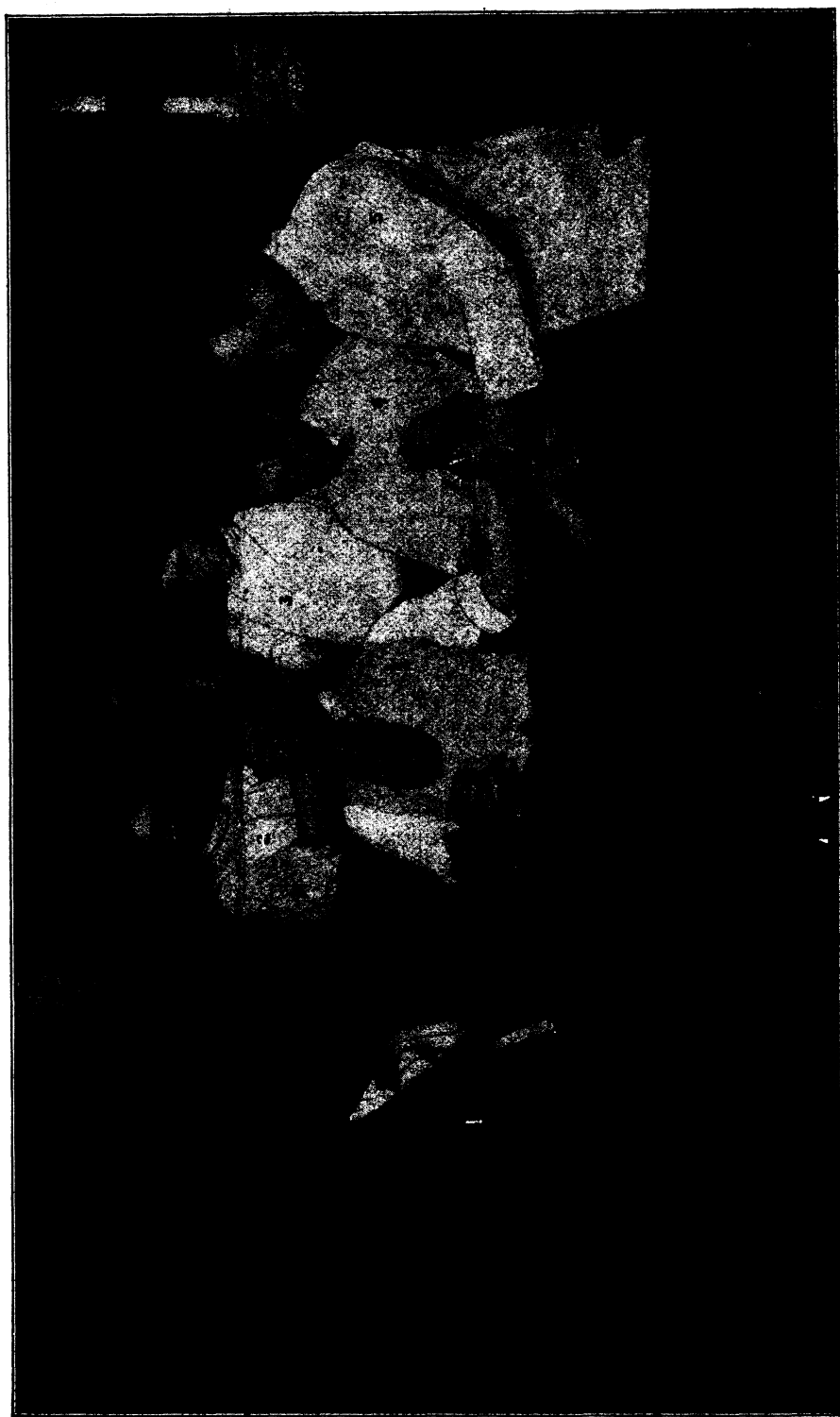


Fig. 12.

cluding efforts of the course and enlisted the interest and presence of many men widely known in the medical and surgical world.

It will be recalled that the blood-pressure in the dog was obtained by cutting the femoral artery and inserting a cannula. This is obviously impracticable with a person, but Dugeon's sphygmograph, a little appliance which rests on the radial artery at the wrist, gives all the details with unfailing exactness. A little metal pad rests on the skin of the wrist over the artery and is held in place by a little movable weight. By varying the position of the weight, the pressure on the artery can be altered at pleasure. The variations of the pulse, as recorded by the metal pad, are traced on a sheet of blackened paper which passes under recording pens in ten seconds; by multiplying the record by six gives a record of a full minute.

Here, then, is the means to the final record, the last and highest test to which an anesthetic can be subjected—its action on the human being. As it is contrary to the rules of the college to administer anesthetics to persons for experimental purposes, the appliances were removed to the writer's office and in the presence of a notable gathering of physicians and surgeons, these records were made. The illustration No. 12, shows the position of the patient with the instrument in operation.

[(1) G. G. Zohrlaut, M. D.; (2-3) the writer's assistants; (4) Francis J. Buss, M. D.; (5) Dwight C. Orcutt, M. D.; (6) the writer.]

Illustration No. 13, gives two sphygmograms with the component parts of the tracing lettered. (a) Primary wave; (b) the dirotic notch; (c) the dirotic wave, and (d) post-dirotic wave. The primary wave is the ascending limb of the sphygmogram, due to systole of heart. The dirotic notch is the depression separating the primary from the dirotic wave. The dirotic wave is an ascent interrupting the descending limb of the sphygmogram, due probably, to recoil of blood from semilunar valves. The post-dirotic wave is the minor interruption in the descending limb, following the dirotic wave.

The first of these were taken before the anesthesia and the other during anesthesia. Very little change in the character of the wave is noted.

Illustration No. 14, shows the sphygmomanometer in operation and a normal record being taken. (a) Rubber bag applied to brachial

artery; (b) tracing on cylinder "E," which is revolved by clockwork; (c) stopcock connected with mercury manometer; (f) tambour space and tambour lever; (g) stiff rubber bulb enclosed in glass bulb.

The sphygmomanometer used in these experiments is the one devised by L. Arlanger, and described in detail in "Johns Hopkins' Hospital Reports," Vol. XII, 1904. Its construction permits the determination of both the maximum and minimum blood-pressures from the graphic record taken from the brachial artery.

The facts concerning the experiments at the college had aroused no slight degree of interest among those who knew of them, and when

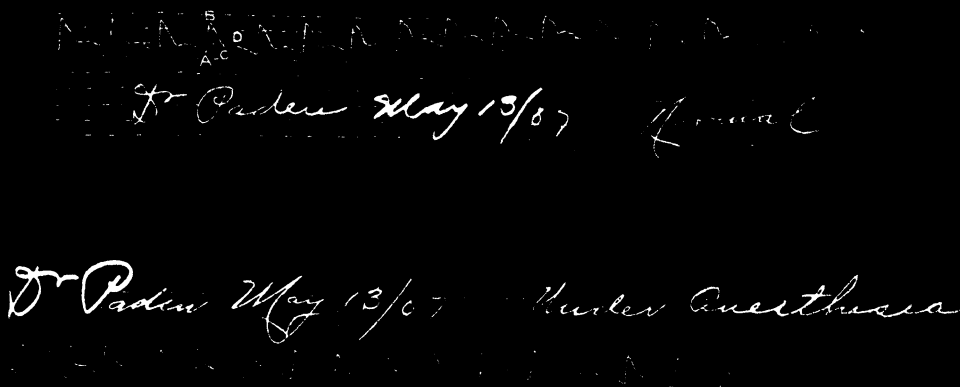


Fig. 13.

these final tests were to be made by a number of men of very high standing in medicine and surgery (for whom the writer has administered somnoform) gathered to witness them.

Illustration No. 15 shows the physicians present.

(1) Francis J. Buss, M. D., professor of diseases of ear, nose and throat, College of Medicine and Surgery, Chicago. (2) R. H. Brown, M. D., associate clinical professor of the diseases of the ear, nose and throat, College of Physicians and Surgeons, medical department of the University of Illinois, attending physician nose, throat and ear department West Side Free Dispensary. (3) Clark W. Hawley, M. D., professor ophthalmologist Post-Graduate Medical School, ophthalmologist and otologist to Provident Hospital. (4) Joy L. Frink, D. D. S., publisher and associate editor AMERICAN DENTAL JOURNAL, member Frink & Young Co. (5) Dwight C. Orcutt, M. D.,

assistant surgeon Illinois Charity Eye and Ear Infirmary, professor otology, rhinology and laryngology Dearborn Medical College. (6) John A. Cavanaugh, M. D., ex-interne St. Anthony's Hospital, ex-interne West Side Hospital, assistant Chicago Eye, Ear, Nose and Throat Hospital. (7) Noble M. Eberhart, M. D., M. S., professor electro-physics Chicago Post-Graduate Medical School and Hospital, secretary of faculty Chicago College of Medicine and Surgery, attending surgeon Frances Willard Hospital. (8-9) The writer's attendants. (10) Geo. P. Dreyer, A. B., Ph. D., professor of physiology College of Physicians and Surgeons, medical department University of Illinois, formerly with Johns Hopkins University. (11) Charles M. Paden, M. D., D. D. S., professor of anesthesia (formerly oral surgeon) College of Medicine and Surgery, Chicago. (12) Bernard Fantus, M. D., professor of materia medica and therapeutics College of Physicians and Surgeons, medical department University of Illinois. (13) S. Lee Gabby of the College of Physicians and Surgeons, medical department University of Illinois.

The writer decided to be the patient, as he wanted to know the exact feeling experienced by the patient under prolonged somnoform anesthesia. His assistants were selected to give the anesthetic, as they were thoroughly familiar with its administration, having assisted the writer in all his operations. He had administered it hundreds of times without an alarming symptom, had seen the fear and nervousness yield place to peace, the tense muscles relax in sleep and the most painful operations performed without a quiver. This much his eyes told him, but of what went on in the hidden brain where the centres like monitors watch over the action of heart, blood vessels and lungs, he could only gather clinical evidence. But this test was to be much finer and more exact. Any irritation of the bronchial tubes, which would lead to a spasm as in choking or coughing; any depressant effect on the heart muscle or the cardiac centres in the brain; any action on the vaso-motor centres which affect the calibre of the vessels would be instantly and clearly shown by the needless tracing on the blackened paper. Here we learn past all question, whether somnoform is a depressant on any portion of the circulatory apparatus, a question of the greatest importance as to the safety of the anesthetic and the probabilities of successful resuscitation of patients.

As a basis for comparison a sphygmogram was made before the anesthetic was administered and showed the systolic pressure (the pressure during the contraction of the left ventricle) to be 170 and the diastolic pressure (that during the time the left ventricle is expanded) at 135. At the end of five minutes under anesthesia, a second sphygmogram was taken and showed systolic pressure 165 and diastolic pressure varying from 130 to 135.

Illustration No. 16, shows the sphygmograms. All were surprised at the very slight departure from the normal record. Here are the whole lines of activities from the centres in the medulla to an artery in an extremity exposed to the action of a general anesthetic, without a sign of depression which was of the slightest consequence. During the anesthetic Dr. Fantus reported on the pulse rate and Dr. R. H. Brown on the respiration. Here are the reports:

Dr. Caden Normal Before Anesthesia

150 145 140 135 130 125

Dr. Caden 5/13/07 Under Anesthesia

150 145 140 135 130 125

Fig. 16.

Time.	Respiration.	Pulse rate	
3:06	22	92	
:08	22	104	Anesthesia started.
:09	18	116	Corneal reflex abolished.
:09½	12	100	Corneal reflex abolished.
:15	Anesthesia stopped.
:16	92	
:20	92	
No after effects.			

It will be seen that beginning with the administration of the anesthetic the heart's action is stimulated for a period of one and a half minutes. It then returns to normal and remains so during the seven minutes of continuous administration. The breathing decreases in rapidity and gains in depth so that when the corneal reflex was

abolished it is slow, tranquil and deep. It will be noted that administration was continuous for a period of seven minutes, long enough for a severe surgical operation and longer than would probably be required for any dental operation.

At a recent clinic the writer anesthetized thirty-four patients in the presence of physicians, who kept records of the heart action and signed reports which the writer has. These patients were chosen at random. They ranged in age from 11 to 76 years, and through all the scale of good, bad and indifferent physical conditions. Here are the records as to heart action, the point on which we are now dwelling particularly:

Name—	Age.	Pulse before.	Pulse during.	Pulse after.
Mr. T. C. D.	37	76	78	76
Mr. P. P.	32	66	69	66
Dr. J. C. A.	57	100	112	98
Mrs. S. P. V.	76	80	82	81
Mrs. J. R.	35	90	104	90
Mrs. E. S.	68	76	90	79
Mr. W. D.	21	80	90	80
Mr. G. E.	21	76	86	77
Mr. G. M. H.	20	76	80	..
Mrs. A. S.	33	72	76	72
Mr. F. R.	12	88	120	96
Miss B. W.	50	76	108	100
Mr. M. R.	47	80	96	88
Dr. E. G.	31	100	120	100
Mr. Y. P. V.	24	94	100	96
Mr. L. W.	23	88	92	90
Dr. J. H. V.	30	70	74	70
Dr. C. O. P.	33	86	95	86
Dr. J. J. H.	23	87	94	88
Mrs. L. V.	38	88	99	89
Mrs. M. L.	42	90	98	90
Mrs. L. A.	44	95	110	95
Dr. F. B.	26	78	100	89
Mr. C. O. W.	44	92	100	96
Miss S. J.	36	98	120	90
Mrs. E. W. F.	38	104	124	104
Eva S.	11	80	92	92
Mrs. E. S.	21	88	99	88
Mrs. R. R.	32	100	116	100
Mr. W. M.	26	80	100	86
Mrs. J. W. C.	63	88	96	90
Mr. T. G.	33	82	99	82
Mr. C. B. C.	45	90	107	90
Mrs. S. A. B.	56	80	82	80

The writer extracted from one to fifteen teeth for each patient. Each of these experiments was signed separately by the two physicians

in attendance, and only one patient was reported as feeling slightly nauseated, which bears out the writer's experiments at about 3 per cent of his patients become nauseated.

Dr. Rolland states in his experiments about 1 per cent of his patients experience nausea.

Some months ago the writer received a letter from Dr. W. Orr



Fig. 14.

Gray of Melbourne, Australia, also a reprint of one of his articles from the Australian Journal of Dentistry, February 28, 1906, entitled "Somnoform, Its Efficacy and Safety," in which he cites 3,000 personal cases with about 3 per cent of nausea. (This personal letter will be found in the August, 1907, No. page, 498, of **THE AMERICAN**

DENTAL JOURNAL. The reprint will appear later in the JOURNAL. Thanks to Dr. W. Orr Gray for his valuable information.

The writer thinks that he would be safe in saying after one has had quite a little experience and has become familiar with the administration of the anesthetic that an average of 3 per cent of his patients will experience the feeling of nausea.

SUMMARY.

What are the conclusions to be drawn from these series of experiments? First, That somnoform is not, under normal conditions, a dépressant. We have seen that the pulse and respiration are at first stimulated and then remain about normal unless anesthesia is pushed to the limit. There have been abundant proofs of this on both animals and patients. We have also seen that the blood-pressure in animals shows but little change during long periods of anesthesia unless outside interference occurs and that it then quickly returns to normal. As related in the account of the last experiment, the blood-pressure in man after five minutes of complete anesthesia shows remarkably little change. These results are of the greatest importance to the anesthetist. They indicate first that the respiratory centres are not depressed and that normal quantities of air are continuously inspired. When considered in connection with the rapid elimination of somnoform, this means that few patients will show signs of collapse, that it will not ordinarily be far reaching and that should resuscitation become necessary, the condition of the respiratory centres is such as to greatly assist.

The pulse and blood-pressure records are not less important. They indicate an excellent tonic condition of the centre even after long anesthesia and equally good tonic condition of the heart and blood vessels. Just as you cannot have good water pressure unless both the pumps and pipes are in good condition, so you cannot have normal blood-pressure unless this centre governing the activity of the heart is in good condition and the vaso-motor centres maintain the blood vessels in normal calibre.

A proper condition of these centres insure that the oxygen inspired by the lungs shall be properly and promptly distributed to the nerve centres and tissues and become the most important of all supporting and resuscitation forces.



Fig. 15.

In view of these results the writer feels that somnoform belongs in the same class as ether so far as its action on the blood-pressure goes. It certainly does not belong in the class with chloroform, which is a heart depressant. Its standing as regards to safety must be taken from the history of its administrations. The writer is of the opinion that as regards safety it must be classed with nitrous oxide. The writer has been able to learn of four authentic deaths, two in this country and two in others. The writer does not know how many administrations there have been, but he has records of 72,641 by large users, with the most satisfactory results and thinks there must have been more than 500,000 since the International Dental Congress at St. Louis, Mo., 1904. Each of the anesthetists reports complete satisfaction (with the exception of one) and many added words of praise. He also chanced to meet one of the members of the faculty of the Dental Department, University Illinois, who informed him that somnoform had been administered 1,500 times in their clinics with excellent results. It therefore seems necessary to conclude that somnoform should be classed with nitrous oxide as to safety, and the records class it as much safer than ethyl chloride and ethyl bromide, from each of which a considerable list of fatalities are reported.

As regards convenience, somnoform stands alone in the ease of administration, speed with which anesthesia is induced, the duration of anesthesia and speed and completeness of recovery.

It was the writer's intention to carry this series of experiments on and include nitrous oxide at this term of the college year. He has made a careful study of the literature on the subject to familiarize himself with what has already been done; but the unexpected delays to which we have been subjected and the approach of the end of the college term, made it impracticable at this time. The best he can do now is to present a brief summary of his information of that subject.

Where nitrous oxide is indicated it is generally conceded to be a very safe anesthetic. Dr. J. M. Patton, "Anesthesia and Anesthetics," 1905, says: "There are no special dangers connected with the administration of nitrous oxide and oxygen. So far as this method has been employed it seems to be remarkably free from danger. Hewett in his search through Medical and Dental Journals, covering a period of 40 years, found records of only thirty deaths, several of which were not due to the anesthetic directly. In infants and young children,

nitrous oxide is an unsatisfactory and dangerous anesthetic, because of the liability of asphyxia. Combined with oxygen the dangers are less. Nitrous oxide is not as safe in elderly people as in middle life, and in senile subjects should be given with oxygen. The pulse ranges from 110 to 160 per minute.

"Ether is comparatively free from danger in healthy subjects. Ether is more dangerous administered in winter than in summer, and is slightly more dangerous in females than in males. Ether is less dangerous in infants than chloroform and its period of greatest danger is from 50 to 70 years of age. Death rate under ether is 1-14987 (Jullard, of Geneva, 1891). Ether causes a rise in blood-pressure in the first and second stages owing to excitement and muscular exertion. In full anesthesia the pressure falls near to normal.

"Chloroform is safer administered in warm climates than in cold climates, and is most dangerous during infancy and after 30 years of age, and least dangerous from 10 to 30 years. Chloroform is said to be about twice as dangerous in males as in females. Death rate under chloroform is 1-3258 (Jullard, of Geneva, 1891). Chloroform causes diminished arterial tension from the start. Statistics show us that chloroform and ether are not indicated for operation in the dental chair. The writer in his search through the dental journals, found a record of thirty deaths from chloroform, in this country from 1904-'06. Up to the present time ether has not been used to any great extent in the dental office. All dental operations that cannot be performed under nitrous oxide or somnoform should be taken to the hospital, operation performed on the operating table, in a recumbent position, and the anesthetic administered by an experienced anesthetist.

"A. C. E. mixture is composed of one part alcohol, two parts of chloroform, and three parts of ether. When inhaled the odor of the mixture is not unpleasant. The effects are more similar to those of chloroform than of ether, though partaking of the peculiarities of both. This mixture probably should occupy an intermediate position with ether and chloroform as regards safety. There are special conditions in which it may be the agent of choice."

E. Overton (Studien uber die Narkose, Jena, 1901) compares the concentration necessary for anesthesia by the following anesthetics in this manner.

Ether	1: 400	Ethyl Bromide	1:3500
Ethyl Chloride	1:3500	Chloroform	1:6000

On mixtures of anesthetics he remarks: "The narcotic action of two anesthetics adds itself quite accurately; so that by a combination of two different anesthetics with different side effects, a complete anesthesia with less of the side effects of each may be obtained."

He believes that the anesthetic of the future will be a suitable combination of several different narcotics.

G. A. H. Barton, of London, in the "Guide to the Administration of Ethyl Chloride," says: "For many years ethyl chloride has been used for the production of local anesthesia by freezing, and it was while using it in this way in 1895 and 1896 that Carloon and Theising, two foreign dentists, independently observed general anesthetic effects. Lothiesen appears to have been the first surgeon to give it a trial in 1896."

Extracts from article in "British Dental Journal," March 15, 1906, by F. C. Eve (Hull), M. B. B. S. Constab., entitled, "Ethyl Chloride." "The writer knows of no less than eighteen deaths from ethyl chloride in the literature, nearly half being dental cases, and two being in children."

Somnoform was discovered in 1895, by Dr. Rolland, of Bordeaux, France, and has been used quite extensively since that time, with a death list of only four. If there have been eighteen deaths from ethyl chloride during the past ten years and only four under somnoform, does it not show that somnoform is a far safer anesthetic than ethyl chloride?

I was about to conclude my article without giving the mortality of nitrous oxide gas, for the reason that the writers on the subject give it from 1 in 25,000 to 1 in 250,000. But just as the article was ready to go to the JOURNAL, a communication was received from Dr. Frederick B. Moorehead, professor of anesthesia Rush Medical College, Chicago, also professor of Oral Surgery Dental Department of Illinois. He has given thousands of administrations and his experience with the anesthetic, the writer deems second to none in this country. By permission of the doctor his letter is inserted below. (The writer is greatly indebted to Dr. Moorehead for this valuable information.)

August 13, 1907.

Dr. C. M. Paden, 72 Madison street, Chicago:

DEAR DOCTOR—I have your letter of August 9, asking for some information on the mortality of nitrous oxide as a general anesthetic.

In carefully searching the literature on the subject, the estimated mortality in this country and in Europe, is about 1 in 150,000 cases. Estimating from my own experience and the experience of some of my friends, who have used the agent very extensively, I would say the rate was a great deal lower; at least 1 in 250,000 or even 1 in 300,000. It is a question whether the cause of death in the cases reported are directly referable to the use of nitrous oxide. Properly administered, I consider the agent absolutely safe—the safest of all general anesthetics.

Very truly yours,

F. B. MOOREHEAD.

In summing up these experiments, it is the writer's opinion that in many cases of minor surgery and preliminary anesthesia, somnoform is the anesthetic of choice and should be taught in both medical and dental schools.

The writer is greatly indebted to Dr. Bernard Fantus, Dr. George P. Dreyer, Dr. Lee Gabby, the superintendent of the College of Physicians and Surgeons and all those who rendered any assistance whatever, for the interest and courtesy they have shown and the very kind assistance they have given him.

OBJECTIONS TO QUICK-SETTING AMALGAMS.

While the quick-setting alloys is an ideal material for saving teeth, yet on the other hand the quick-setting features are often the cause of amalgam failures. The operator endeavors to fill too many cavities with one mix, consequently the amalgam is used after partial setting has taken place. These fillings are lamentably weak in edge strength, and shrinkage ultimately prevails because the operator can not work out the surplus mercury after it has chemically united with the metals of the alloy. At least two mixes should be made for large contour fillings in the event that quick-setting alloys are used.—*American Journal of Dental Science.*



ABSTRACTS AND SELECTIONS.

ADDRESS OF THE PRESIDENT READ AT THE MEETING OF THE F. D. I., GENEVA, AUGUST 8, 1906.

BY PROF. W. D. MILLER.

I am inclined to think that a detailed account of the development of the F. D. I. during the past year will not be expected of your president at this time. At the annual meeting of the executive committee held in Hanover a number of important resolutions were adopted which were designed to define more closely the prerogatives of the F. D. I. and its relation to the national dental organizations of the various countries represented. This having been accomplished the executive committee deemed it advisable to postpone further important action till the time of the meeting which is now at hand. We have, I think wisely, devoted a certain amount of time in getting our exact bearings and in preparing to set out on a new course. The constitution of our federation makes provision for general meetings to be held only in connection with international dental congresses whereas the meetings of the executive council are to take place annually. Shortly after the session at Hanover the desire was expressed by some of the members that the next meeting which it had been decided to hold in Geneva should be a general one. A ballot taken by letter resulted in ten votes for a general meeting and eleven for a meeting of the executive council only; eight members placed their votes at the disposition of the president, who, yielding to the earnest desire of the minority, cast these votes in favor of the general meeting and demands in return the indulgence of these members for his many shortcomings in the administration of the affairs of the F. D. I.

Gentlemen, some years ago, when I was called to the presidency of an important dental organization, my first step was to procure a

little book entitled "How does one conduct a meeting?" One of the important things which I learned from the book was, that the chairman is to exert his function as presiding officer to its full extent, but that he should leave the talking as far as possible to others. This course is all the more commendable to-day inasmuch as we have a programme sufficiently extensive to take up all of the time at our disposition. I am accordingly sure of your approval when I attempt to make my introductory remarks as few and as concise as possible.

We are here as representatives of a branch of the healing art whose great importance, in particular from a hygienic point of view, no one nowadays ventures to question and whose parity with the other branches of medical science is fast receiving recognition at the hands of the layman as well as of the physician.

This speciality of ours has had a very remarkable history. In the earlier beginnings of medicine, among the Egyptians and Greeks, the dignity of the diseases of the teeth and their sequels was fully recognized and they received the same attention as diseases of other organs of the human body. The great Hippocrates, whose observations and investigations extended to all branches of medicine, and after him Celsus and Galen devoted much time to the study of the diseases of the teeth and counted them among the gravest disorders of the human body.

According to Fauchard it was in France not till about the beginning of the 18th century that the most celebrated surgeons divested themselves of this part of their art and followed it with no particular zeal, their motive being found in the fact that the development of the art of filling and replacing teeth necessitated a particular technical training on the part of the practitioner for which the more highly educated surgeons had no taste. This action on their part is accountable for the fact that persons equally deficient in theoretical knowledge and in practical training turned their attention to this branch of the healing art to the great detriment of the public as well as of the profession itself.

In Germany, also, dentistry was relegated for the most part to persons (barbers and quacks), who in respect to its practical demands had enjoyed very limited instruction and in the scientific direction none at all.

In the same manner we may say that in nearly all European countries dentistry in the middle ages and in fact down to the pre-

ceding century sank to a very low level and we cannot give too much praise to those who, with much labor and perseverance, have lifted it out of its low estate and made of it the great profession which it is to-day recognized to be. Naturally the methods formerly employed and the results accomplished would in many cases nowadays scarcely be recognized as pertaining to the science of dentistry and there are many still living who bitterly complain that in their youth there was no such a thing as conservative dentistry and that the common practice was to wait until the teeth were destroyed by caries, when the remains of the crowns were nipped off and replaced by badly-fitting plates.

Fortunately there were still some men of education who had taken advantage of the best preparation which could be had at that time, and who turned their attention to the practice of dentistry and it is a fact noted by Pfeffermann and worthy of all attention that *the real progress made by our profession was due to the efforts of these educated men and not to the chance discoveries of the empiric.*

It is not surprising however that the development of dentistry in different countries has been very unequal and along very different lines.

In one country the practice of dental surgery is still in the hands of the physician who has not yet learned to appreciate the great importance of this branch and who has acquired but a very inadequate knowledge of it, both in its scientific and practical aspect, with the result that with a few brilliant exceptions the profession is there now about in the same position as it was two centuries ago. In another country a special, though for the most part inadequate, study of dentistry has been superadded to a thorough knowledge of medicine and we have a condition vastly superior to the former, but perhaps an overburdening with general knowledge and accordingly inability as a whole to attain to the highest perfection in the specialty. In other countries again the greatest stress is placed upon the practical branches of dentistry somewhat to the neglect of the scientific aspect, which has not received the attention and encouragement demanded by the highest interests of the profession. Finally in regard to the general education (preliminary requirements) exacted of the student of dentistry the widest diversity of opinion and practice has existed and still exists to a considerable extent.

Heretofore there has been too little unity of action and steps relating to questions of dental education have been taken in different countries without having adequately studied that which has been accomplished in others.

We find accordingly that the educational system in different countries have no common foundation and no common superstructures and it is one of the objects and aims of the F. D. I., by a careful study of these systems and of the results they have yielded, to render assistance in constructing a system combining the best parts of all of them and promising accordingly to give still better results than have been obtained heretofore. Always bearing in mind however that the F. D. I. is only an advisory body ready to place itself at the disposition of any country or school in need of its advice but in no way empowered to enforce its views upon any corporation or any person against his will.

Again, we may regard it as an established fact that the oral cavity is the principal port of entrance for infectious diseases of the human body and that there is no better way of combating these disorders and maintaining the body in a permanently healthy condition than by a constant rational care of the teeth but I must point out to those of you who have not given especial attention to this subject that, while the blessings that dentistry is able to confer upon suffering humanity are exceedingly great, only a very small proportion of the total population of the world is in a position to avail itself of them. I have elsewhere estimated that at the present time, taking it the world over, perhaps not more than one in a thousand can afford the luxury of having a diseased molar treated and filled, and even in those countries where the greatest attention is bestowed upon the hygiene of the teeth, millions of poor people, who in the struggle for existence are most severely handicapped because of the many ills produced by the decay of the teeth are debarred from obtaining dental service on account of the expense attending it.

Very laudable efforts are being made all over the world to devise ways and means of rendering the services of the dentist accessible to the poorer and poorest classes and especially to the school children, for nowhere does the great blessing of dental hygiene manifest itself to a fuller extent than when it is begun in early youth, because at this period foundations are laid and conditions produced which have

a lasting effect upon the development and the resisting powers of the whole body. A diseased condition of the oral cavity in early youth has a deleterious effect which can scarcely be counteracted in later years. The care of the teeth of the public school children is a question which must therefore appeal especially to the human instincts of our profession, inasmuch as just there poorer people in their daily struggle for existence suffer much more than the wealthier classes, not being able to seek the aid of a dentist or to compensate for the loss of teeth by the insertion of artificial substitutes. The treatment of the teeth in childhood is not only a blessing in itself but it also teaches the child the great importance of the proper care of the teeth and inculcates habits of cleanliness which in themselves are of the greatest value for its health and comfort.

We have accordingly herein a second great field which is well worth the attention of the F. D. I. and, I may add, there is no object to which the surplus wealth of our charitably inclined millionaires can be devoted than to the creation of institutes for the care of the teeth of poor children.

The closely related questions of dentistry in the army and navy are no less deserving of a careful study.

Finally, the questions coming under the jurisdiction of commission IV—IX complete a programme which is adapted to furnish the F. D. I. with an adequate amount of work for many years to come.

In beginning our deliberations I need not say that I am sure that we are all firmly resolved in every respect to put the interest of the F. D. I. above all sectional interests, the interests of our profession above those of the F. D. I., but highest of all the interest of suffering humanity and in particular of the suffering poor whom it is our privilege and sacred duty to serve, and for my own part I am always willing to submit to the severest censure at your hands if I should at any time be found to deviate from this standard.—*Proceeding of F. D. I., Published by Paul Guy, Assistant Secretary.*

REPORT TO THE INTERNATIONAL COMMISSION ON HISTORY OF DENTISTRY.

BY DR. CHAS. MCMANUS.

For nearly one hundred years the history of the dental art has, from time to time, interested a few members of the profession in Europe and America. Beginning with Duval's "Recherches historiques sur l'art du dentiste chez les anciens" (1808) the work of gathering data, more or less valuable, has been continued and publications on the subject are to be found by such men as Fitch, Snell, Nasmyth, Linderer, Desirabode, Carabelli, Harris and others.

Indeed, the great Chapin A. Harris himself was deeply interested in this phase of dental literature and to his biographical studies, first published in 1849, we are indebted for much of our knowledge of the early practitioners in America. Two years before the publication of his own volume, Harris was instrumental in the issuing at Baltimore of a translation from the French of a work by Desirabode entitled "Science and Art of the Dentist and Historical and Chronological notice of works on Dental Art since Hippocrates."

Some ten years later enough interest seems to have been taken in historical matters as to warrant the publication in the *Dental Review*, London, and the *Dental News-Letter*, Philadelphia, of a translation by Mr. A. Hockley of that part of Kurt Sprengel's "History of Medicine" which related to dentistry.

Whereas in Europe those dentists that were interested in historical matters could refer to a few works on the subject, in America we had no volume relating to the history of the dental art until the publication, under the auspices of the American Academy of Dental Science, of Dexter's "History of Dental and Oral Science in America" (1876). This volume issued in connection with the celebration of the centennial of the founding of the republic was hastily prepared and of limited scope; it was not financially successful but it was prepared on the proper lines and remained for years the only reference book on the subject in English.

In 1877 Mr. Alfred Hill published his "History of the Reform Movement in the Dental Profession in Great Britain during the last

Read at the meeting of the F. D. I., Geneva, August 8, 1906.

Twelve Years." This work necessarily limited in extent, covers the period mentioned in a most complete and satisfactory manner.

In 1883-84 Perine's compilation "A History of Dentistry from the Earliest Period to the present time" appeared in an American dental journal and in 1892 Cigrand's well-meaning but unscientific volume entitled "Rise, Fall and Revival of Dental Prosthesis" was published. This volume was the outcome of a series of lectures delivered before the students of a college in Chicago.

At the world's Columbian Dental Congress held at Chicago in 1893 an attempt was made to prepare a dental history but the work of the committee was barren of result.

In 1896 was published at Tübingen the admirably prepared and scholarly work by Dr. G. P. Geist-Jacobi entitled "Geschichte der Zahnheilkunde vom Jahre 3700 v. Chr. bis zur Gegenwart."

In 1900 appeared Lemerle's "Notice sur l'Histoire de l'Art Dentaire," a most valuable work published in connection with the Universal Exposition of 1900.

Aside from these larger works many essays have appeared relating to particular features in the development of modern dentistry. In Italian by Dr. Guerini, in German by Dr. Geist-Jacobi, in Dutch by Dr. Grevers, in French by MM. David, Martin, Gross, Deneffe, Godon, Viau, and others. In English many papers have been published in the journals by Drs. Taft, Patrick, Wm. H. Trueman, Edward C. Kirk, Dr. Burton L. Thorpe's biographical sketches, with portraits, of nearly all of the early American practitioners are the result of a vast amount of work and are of great interest.

At the Fourth International Dental Congress held at St. Louis in 1904 the Committee on the History of Dentistry of which Dr. Wm. H. Trueman of Philadelphia was chairman presented a report on the history of dental education in the United States. One of the first papers read before the general session of this congress was by Dr. George Viau of Paris on the father of dental surgery, Pierre Fauchard.

At the first meeting of the National Dental Association held in 1897 a committee was appointed to adopt means looking towards the preparation of a "full history of the dental profession." This committee has endeavored to interest the members of the profession, particularly in America, in this subject; to collect data of all descriptions; to bring matters of historical and biographical interest

before the societies. It has been one of the objects of this committee to encourage the idea of lectures illustrated with the stereopticon on dental history to be delivered before the young students of our colleges.

There is another matter in connection with the work of the Committee of the National Dental Association to which we desire to seriously invite your attention.

At the 1905 meeting of the National Dental Association, the Committee on History of Dentistry reported to the Association that Dr. Vincenzo Guerini, of Naples, Italy, had written a History of Dentistry from the earliest times down to the beginning of the Nineteenth Century, which work is in the hands of the Committee, having been translated into English and fully revised and edited. Dr. Guerini has generously placed the publication of this great work under the patronage of the National Dental Association in token of his appreciation of American dental development.

The Committee believes that the general and growing interest in the history of our profession is a sufficient warrant for this undertaking. Our historical records are scattered through a vast literature and much of it is of great antiquity. Dr. Guerini has spent many years of his professional life and large amounts of money in the collecting of the material for this work. It has involved the searching of libraries and museums, the translation of many old documents and publications and the digesting and arranging of this matter into proper form. As a historical writer the distinguished author needs no introduction, as his contributions on dental history in our magazines are well-known and their excellence is an earnest proof of the excellent and exhaustive character of his larger work now in the hands of the Committee on History of Dentistry for publication.

The importance and value of dental art and science as a humane service is well recognized, but we are so accustomed to view this question from the modern standpoint that we, generally speaking, overlook the immense work done by our predecessors, reaching far back in unbroken line to the mists of antiquity. It was they who laid the foundations upon which modern dentistry has been built and no man can peruse the record of their efforts as set forth in Dr. Guerini's book without developing a higher appreciation of their work and a keener realization of the worth and dignity of the calling which they in common with ourselves followed.

Notices have been sent out to many of the most prominent dentists of the world and the subscriptions already pledged lead us to believe that this remarkable work by Dr. Guerini will be published in the near future.

As the development of the dental art has been confined to no one country but has been truly international it would seem particularly appropriate that the general supervision of the collection of data on the history of the profession—past and future—should be in the hands of the International Dental Federation.

It is respectfully suggested that one (or more) members of the Federation in each country be appointed to superintend the collection of data relating to the dental history of his particular country and that said member report the results of his labors to the General Committee of the Federation.—*Proceedings of F. D. I., Published by Paul Guy, Assistant Secretary.*

DENTAL PROGRESS.

BY DR. L. P. HASKELL.

A recent paper by Dr. Hart J. Goslee on the subject of the progress, or rather, the lack of progress, in prosthetic dentistry was variously criticised. There was lack of comprehension on the part of some dentists as to the position he assumed.

It was along one line of the work that he claimed lack of progress, and that plate work, and in that he was quite correct.

It was the introduction of vulcanite which gave the setback. Few dentists are in practice now who were in practice when vulcanite was introduced into dental practice nearly fifty years ago. Up to that time all teeth were inserted on metal plates, gold, platinum and silver, and it was all soldered work. This required a degree of mechanical skill, for the dentist very generally had to melt, refine and roll his gold. Then came the making of dies, which at that time was not as simple a process as now. Then there was the grinding and arranging of full sets of single gum teeth, investing, backing, and soldering. The finishing was not so easily done as now, when

we have so many conveniences for the work. The grinding was on emery wheels requiring more time than by use of the corundum and carborundum.

Some of us for many years made our own teeth, carved blocks for each case. This required mechanical and artistic skill, preparing our bodies and enamels from the crude materials. A high order of work was produced in this way.

Upon the introduction of vulcanite all this rapidly was changed, and the making of dentures fell into the hands of a class of men who lacked skill in all directions. In fact, so simple is the making of a set of teeth on vulcanite a mere novice can make a tolerable success.

In the course of twenty-five years, metal plates and soldering work largely disappeared, and today very few dentists insert metal plates, even the graduates of our colleges ignore them entirely.

Seventeen years ago I established the first post-graduate school in dentistry. This work has continued to the present time. The students, who are mostly graduates of the fifty or more dental colleges, tell me they have made no metal plates in their practice, from a lack of confidence in their ability to make a success.

The tide, however, is rapidly turning, since the introduction of aluminum, as that is so cheap there is no need of the patient wearing the vulcanite plate, with its destruction of the tissues owing to its non-conductibility.

There has remained, however, after fifty-six years' use, the continuous gum denture, the only ideal denture made, but unfortunately, few are able to do the work, and some who do are exercising neither skill nor taste in the work.

But prosthetic work as a whole, has made great advancement in twenty-five years, far more than has been made in operative dentistry; beginning with the Richmond crown, then bridge-work, then porcelain crown and bridge work, and now the porcelain and gold inlay, with all the improvements in their manipulation, especially in the use of the electric oven, the last and greatest advance being the Taggart cast gold inlay.—*Bur.*



NORTHERN ILLINOIS DENTAL SOCIETY.

The twentieth annual meeting of the Northern Illinois Dental Society will be held at Rockford October 16 and 17, 1907.

Come visit a good town and a "No. 1" Dental Society.

A. M. HARRISON, Sec.

Rockford, Ill.

NORTHERN INDIANA DENTAL SOCIETY.

The Northern Indiana Dental Society will hold its 19th annual meeting in Peru September 17th and 18th. The Northern Indiana is noted for its good meetings, and this promises to be even stronger than heretofore.

Respectfully yours,

W. R. MEEKER, Secretary.

ILLINOIS BOARD OF DENTAL EXAMINERS.

The annual meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the state of Illinois will be held in Chicago, at the College of Dentistry of the University of Illinois, northwest corner of Honore and Harrison streets, beginning Monday, November 4, 1907, at 9 a. m.

Applicants must be in possession of the following requirements in order to be eligible to take the examination: (1) Any person who has been engaged in the actual, legal and lawful practice of dentistry or dental surgery in some other state or country for five consecutive years just prior to application; or (2) is a graduate of and has a diploma from the faculty of a reputable dental college, school, or dental department of a reputable university, or (3) is a graduate of and has a diploma from the faculty of a reputable medical college or medical department of a reputable university, and possesses the necessary qualifications prescribed by the board.

Candidates will be furnished with proper blanks and such other information as is necessary, on application to the secretary. All applications must be filed with the secretary five days prior to the date of examination. The examination fee of twenty (\$20) dollars, with the additional fee of five (\$5) dollars for a license, must accompany the application.

Address all communications to J. G. REID, Sec'y,
1204 Trude Bldg., Chicago, Ill.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The National Association of Dental Faculties held its annual meeting in Minneapolis July 26, 27, 28 and elected the following officers for the ensuing year:

M. W. Foster of Baltimore, president; H. B. Tileston of Louisville, vice-president; George E. Hunt of Indianapolis, secretary; H. R. Jewett of Atlanta, treasurer.

Executive committee: D. J. McMillan, Kansas City, chairman; H. B. Tilestone, Louisville; B. Holly Smith, Baltimore; A. G. Friedrichs, New Orleans; E. W. Branigan, Boston.

Ad Interim Committee: Dr. J. P. Gray, Tennessee, chairman; S. H. Guilford, Philadelphia; R. M. Sanger, Orange, N. J.

The members of all the other committees were all re-elected.

NEW JERSEY DENTAL SOCIETY.

The New Jersey Dental Society held its annual meeting in Asbury Park, July 17, 18, 19.

Dr. Walter Waverly of Elizabeth was elected president of the society for the coming year. Dr. Frank Gregory, of Newark, defeated Dr. Jaquette of Salem for the vice-presidency.

Dr. Charles A. Tucker of Newark was re-elected secretary, and Dr. H. H. Hull of New Brunswick treasurer. Thirty-two members were also elected, including Dr. John D. Ballard, the colored dentist, of Orange, who was the only applicant separately voted for. Ballard was vouched for by Drs. Adams, Fisher and Richards, of Orange, who testified to his ability and good character. Only twelve votes were recorded against him out of a total of fifty-six. The books and papers of the late Dr. Levy, which were bequeathed to the society, were presented to the New Jersey Southern Dental Society.

DELTA SIGMA DELTA.

Delta Sigma Delta Society held its annual meeting Hotel Plaza, Minneapolis, July 30, and elected the following officers for the ensuing year:

Supreme grand master, Dr. Charles R. Turner, of Philadelphia; supreme worthy master, Dr. Charles E. Meerhoff, of Chicago; supreme scribe, Dr. R. H. D. Swing, Philadelphia; supreme treasurer, Dr. J. Q. Bryan, Indianapolis; supreme historian, Dr. R. Ottolengui, New York. Covers were laid for seventy-five at the Dutch lunch served in the evening.

The next meeting will be held in Boston, Mass.

THE NATIONAL DENTAL ASSOCIATION'S OFFICERS, 1907-1908.

The National Dental Association at its eleventh annual session, Minneapolis, July 31st, elected the following officers for the ensuing year:

President, William Carr, New York City; vice-president for the east, Wilbur F. Litch, Philadelphia, Pa.; vice-president for the south, J. P. Gray, Nashville, Tenn.; vice-president for the west, Alfred Owre, Minneapolis, Minn.; corresponding secretary, Burton Lee Thorpe, St. Louis, Mo.; recording secretary, Chas. S. Butler, Buffalo, N. Y.; treasurer, A. S. Melendy, Knoxville, Tenn.

Executive Committee—New Members.—L. Meisenburger, Buffalo, N. Y.; F. B. Kremer, Minneapolis, Minn.; M. F. Finley, Washington, D. C.

Executive Council.—H. J. Burkhart, chairman, Batavia, N. Y.; J. Y. Crawford, Nashville, Tenn.; A. H. Peck, Chicago, Ill.; F. O. Hetrick, Ottawa, Kas.; B. Holly Smith, Baltimore, Md. Next place of meeting Boston, 1908.

BURTON LEE THORPE, Corresponding Secretary.

SURGICAL CLINIC OF THE JAMESTOWN DENTAL CONVENTION.

NORFOLK, VA., SEPT. 10 TO 12, 1907.

The following gentlemen will give surgical clinic at Jamestown Dental Convention:

Dr. Trueman Brophy, Chicago, Ill.

Dr. M. I. Schamberg, New York, N. Y.

Dr. W. J. Roe, Philadelphia, Pa.

Dr. V. P. Blair, St. Louis, Mo.

Dr. W. A. Bryan, Nashville, Tenn.

Dr. B. G. Copeland, Birmingham, Ala.

Dr. Wm. T. Nicholson, Atlanta, Ga.

Dr. Fred W. Moorehead, Chicago, Ill.

Dr. Randolph Winslow, Baltimore, Md.

Dr. Schamberg will also give an exhibition of the X-ray for making diagnosis and a clinic with the X-ray showing its diagnostic value in oral surgery.

These operations will be performed in the operating rooms of the Norfolk Protestant Hospital, where patients will be cared for following the operation.

It is expected that patients will be furnished all operators, as a committee has been appointed in Norfolk and surrounding towns for this purpose.

L. M. COWARDIN,

Chairman Surgical Clinic.

407 East Main Street, Richmond, Va.

JAMESTOWN DENTAL CONVENTION.

Revised program for the Jamestown Convention meeting to be held in the Convention Hall, Exposition grounds, Norfolk, Va., September 10-11-12, 1907:

OFFICERS.

Honorary president, J. Y. Crawford, Nashville, Tenn.; president, V. E. Turner, Raleigh, N. C.; first vice-president, B. Holly Smith, Baltimore, Md.; secretary-general, George S. Keese, Richmond, Va.; treasurer, Mark F. Finley, Washington, D. C.

PROGRAM.

Tuesday, September 10, 1907—

9:30 a. m.—Meeting called to order by Dr. Burton Lee Thorpe, St. Louis, chairman Committee on Organization.

Invocation—Rev. Dr. C. L. Bane, pastor Memorial M. E. church, Norfolk, Va.

Address of Welcome—Hon. Harry St. George Tucker, president Jamestown Exposition Company.

Address of Welcome—Dr. Edward Eggleston, Richmond, president Virginia State Dental Association.

Address of Welcome—Dr. Joseph W. Eggleston, Richmond, Va., in behalf of the profession of Virginia.

Address of Welcome—Dr. W. G. Mason, Tampa, Fla., president Southern Branch National Dental Association.

Address of Welcome—Dr. J. Y. Crawford, Nashville, Tenn., in behalf of the profession of the south.

Response to the Address of Welcome—Dr. J. D. Patterson, Kansas City, Mo.

Address by the President—Dr. V. E. Turner, Raleigh, N. C.

Tuesday Afternoon Session—

2:30 p. m.—Clinics in Convention Hall; Dr. Clarence J. Grieves, chairman, Baltimore, Md.

Tuesday Evening, September 10—

8:00—Smoker at Inside Inn; Dr. B. Holly Smith, chairman, Baltimore, Md.

Wednesday Morning, September 11—

9:30 a. m.—Illustrated Lecture—Dr. F. T. Van Woert, Brooklyn, N. Y., "Is the Cemented Filling the Filling of the Future?"

Discussion opened by Dr. Wm. K. Slater, Knoxville, Tenn., and Dr. Craig M. Work, Ottumwa, Iowa.

11:00 a. m.—Illustrated Lecture—Dr. Charles L. Alexander, Charlotte, N. C., "Gold Inlays."

Discussion opened by Dr. H. Herbert Johnson, Macon, Ga., and Dr. J. G. Fife, Dallas, Tex.

2:30 p. m.—Clinics in Convention Hall.

8:00 p. m.—Illustrated Lecture—Dr. R. Ottolengui, New York City, "The Purposes and Accomplishments of Modern Orthodontia."

Discussion opened by Dr. W. O. Talbot, New Orleans, La., and Dr. Henry W. Morgan, Nashville, Tenn.

Thursday, September 12—

9:30 a. m.—Clinics in Convention Hall.

2:30 p. m.—Special clinical lecture and demonstration by Dr. Wm. H. Taggart, Chicago, "Cast Gold Inlays, Bridges and Plates."

Discussion opened by Dr. J. H. Lorenz, Atlanta, Ga., and Dr. L. E. Custer, Dayton, Ohio.

Adjournment.

8:00 p. m.—Entertainment given to members and guests of convention by Virginia State Dental Association under the chairmanship of the society's president, Dr. Edward Eggleston, Richmond, Va.

A cordial invitation is extended to all ethical dentists to become members and attend this meeting.

All sessions are to be held in "the Convention Hall" at Exposition grounds. Entrance to this hall is outside of the grounds, thus saving admission fee to enter it. However, entrance to the grounds is possible without leaving the hall.

To expedite the work before the general sessions all resolutions, motions and routine business must first be submitted to the Committee on Organization, who, at the proper time, will present it to the general body.

COMMITTEE ON ORGANIZATION.

Burton Lee Thorpe, chairman, 305 North Grand avenue, St. Louis, Mo.

Thos. P. Hinman, vice-chairman, Inman building, Atlanta, Ga.

F. W. Stiff, treasurer, 600 East Grace street, Richmond, Va.

R. H. Walker, Norfolk, Va.

J. E. Chace, Ocala, Fla.

Clarence J. Grieves, Park and Madison avenues, Baltimore, Md.

H. WOOD CAMPBELL, Sec.,

Suffolk, Va.

MISCELLANEOUS

REMOVING PLASTER FROM THE HANDS.

In removing plaster from the hands after the application of plaster casts, it would be well to remember the fact that syrup of lime is the strongest solution, and that the application of a little sugar to the hands will greatly assist you. The same rule applies to the removal of casts.—*Ga. Jour. of Med. Sur.*

REMOVING GLAZE FROM CARBORUNDUM STONES.

To renew carborundum stones that have become glazed from grinding down teeth containing amalgam fillings, place them in a beaker and cover with a fifty per cent solution of nitric acid, allowing them to remain for two or three hours. Remove and place in a strong solution of sodium bicarbonate for several hours that the acid which has been absorbed by the stones may be neutralized.—*W. H. Tweedle, Dental Review.*

SENSITIVE DENTIN.

Some time ago Doctor Fossume spoke of the use of "Formalin" for controlling the sensitive spots at the necks of the teeth that are sometimes so troublesome. At that time I questioned its safety, but since trying the method I have found it so satisfactory that I wish to speak of it at this time. The "Formalin" should be used full strength and it must be kept away from the gum. A very short application is sufficient to control entirely a very large proportion of these cases.—*H. W. Gillett, October, 1906, Journal.*

TREATMENT OF SENSITIVE PALATES PRIOR TO THE TAKING OF PLASTER IMPRESSIONS.

In prosthetic work, when your patient has a tender palate and is bothered with retching, to stay such trouble while taking an impression, paint on palate a twenty per cent solution of potassium bromid with a camelshair brush, or gargle 5 to 15 gr., or both. In extreme cases give 10 gr. at night, repeat after breakfast, and again, half an hour before impression is taken, give 10 to 15 gr. It greatly diminishes the sensitivity of a tender palate.—*H. E. Davis, Dental Era.*

EXTRACTION DURING PREGNANCY.

The irritation produced by ulceration at the root of a tooth is usually more liable to interrupt pregnancy than the administration of nitrous oxide and the removal of the tooth or establishing free drainage. The author has had gas given for this purpose and has never seen any bad results.—*Dr. M. E. Jordan, Era.*

NOVOCAIN.

The especial advantages of novocain are found in the extremely slight toxicity, combined with a great anesthetic power, and the absence of all irritating or pain-producing side action. In 10 per cent solution it may be used as an application to mucous membrane and is especially recommended for use in dental work. It is frequently combined with suprarenal preparations.—*New Orleans Medical and Surgical Journal.*

PERICEMENTITIS.

If, instead of using equal parts of aconite, iodine, and chloroform, you use this prescription:

℞ Tinc. Aconiti (rad.).....fluid ounces i
Chloroformifluid ounces iv
Mentholgr. xx
you will get excellent results.—*J. P. Buckley, Dental Digest.*

IRREGULARITIES IN THE DECIDUOUS TEETH.

During four or five years I have advanced the opinion that the position of deciduous teeth affect the permanent teeth, and that therefore any irregularities in the deciduous teeth should be corrected in order to prepare the way for the permanent teeth. If the deciduous teeth are brought to occupy a normal position, the crowns of the underlying permanent teeth will naturally take a correct position and their roots will be formed in harmony.—*E. A. Bogue, New York, N. Y.*

SEAL ALL DRESSINGS IN TEETH WITH CEMENT.

Apply dressing in cavity, cover with ordinary card disc to prevent any pressure by cement coming in contact with dressing. Mix cement rather thin, so it will drop from spatula and adjust itself in cavity. This gives the patient an opportunity to use the tooth while under treatment, prevents their tasting medicine, and, lastly, you get the full benefit of the dressing without it becoming contaminated with the fluids of the mouth.—*LeGrand M. Cox, St. Louis, Mo.*

IMPRESSIONS.

That it is no longer necessary that women should lose a tooth for each child, as was the old belief. That there is little ground for the belief that dental operations are dangerous to the pregnant woman. That dental care will improve the health of the mother. That the fetus is benefited by the dental care of the parent. That the child begins existence better equipped for the battle of life.—*Dr. M. E. Jordon, Era.*

EDGE SHAPE OF CENTRAL INCISOR.

After years of careful comparison I find that almost without any exception, the shape of the face turned upside down is the edge shape of the upper central incisor which belongs to that face. To state this more clearly, I will offer a few illustrations. We will imagine a line drawn across the forehead between the eyebrows, and hair line, and down each side of the face, cutting the crest of the cheek bone to the point of the chin. By inverting this we have the outline of an incisor tooth.—*F. H. Berry, Dentist's Magazine.*

TAKING IMPRESSIONS.

I have one little suggestion to offer in the taking of impressions—particularly in those cases that are extremely sensitive and easily nauseated—that I have found useful and helpful, and that is to sponge the mouth with hydrogen dioxid. After thus having cleaned all the mucous surfaces apply a :100 solution of eucain to the whole palate. That will enable one to take an impression in the most exaggerated cases of palatal sensitivity.—*T. B. Hartzell, Texas Dental Journal.*

CROWNS.

The improved Logan crown has been the most popular factory-made crown for many years. If it will continue to be so, is another question. Unfortunately for our patients and for us, many patients must think about their pocketbooks when having their teeth crowned. In such cases, the Logan, when fitted to a strong root with the joint under the gum line and a gutta percha washer used to fill up the defects in the joint, will make a serviceable crown. Moldable porcelain has been suggested as an excellent thing to build up and secure the perfect adaptation of a crown of this kind, to the root, and no doubt it is very helpful.—*B. H. Biglow, Rockford, Ill., in Review.*

A HAEMOSTATIC.

Potassium permanganate is a valuable haemostatic used in the form of a paste made by mixing it with 4 per cent of vaselin. Dry thoroughly the part to which is to be applied. Keep in an air-tight receptacle when not in use.—*Brief*.

DR. BURKHART APPOINTED EXAMINER.

Dr. J. H. Burkhart, mayor of Batavia, N. Y., has been engaged by the state civil service commission to prepare a form of examination to be taken by applicants for appointment as dentists in state institutions. He has also been retained by the commission to examine the papers of the dentists taking the examination and to mark their papers as to ratings.—*Leroy Chronicle*.

STERILIZATION OF DENTURES.

Sulfurous acid will absolutely deodorize and disinfect a denture and not merely cover the odor of the plate that has been worn in the mouth. Place a few drops in a little water and immerse the case in the solution at night and cleanse with soap and brush in the morning.—*J. Kennerly, British Dental Journal*.

THE AGE FOR REGULATION.

I have continually advocated the early regulation of the teeth—that is while they are erupting and the bone and jaws are in the formative stage. If the arch needs expansion it should be done while nature is at the height of activity in the deposit of bone in these parts.—*V. H. Jackson, Cosmos*.

CHLOROFORM WATER AS A HEMOSTATIC.

This is used by Spaak (*Journal de Med.* September 16, 1906), who finds it superior to all other styptics. It acts with marvelous rapidity, has not the slightest disagreeable taste or odor, is not escharotic, is easily obtainable, and can be made as required. It is not unpleasant when applied, and does not interfere with the surgeon in his operations. Spaak recommends a two per cent simple solution in water.—*Medical Times*.

DO NOT VARNISH INLAYS AFTER SETTING.

The varnishing of an inlay after setting for the purpose of keeping the moisture from the cement has proved incorrect. The cements that are used today in setting inlays are what are called hydraulic cements. We have better success with such cements, for after a proper crystallization has taken place the moisture is immediately allowed to flow over.—*W. H. Cudworth, Dental Brief*.

BLUE LIGHT FOR RELIEF OF PAIN.

Professor Redard and Professor Emery, of Geneva, have discovered a new anæsthetic for use in dentistry. Experiments to learn the effects of colored lights upon the nerves revealed that blue light is extraordinarily soothing. A patient was put in a dark room and his eyes were exposed to a sixteen-candle blue light for three minutes. This caused him to lose the sense of pain and the tooth was then painlessly extracted without the after effects of ether or chloroform.—*Dental Summary, October, 1904.*

OBITUARY

DR. WILLOUGHBY DAYTON MILLER.

The dental department of the University of Michigan, as well as the dental profession at large, suffered a sad blow in the death of Dr. Willoughby Dayton Miller, the new dean of the dental department, at Newark, Ohio, July 27. Dr. Miller died after an operation for appendicitis.

Dr. Miller was appointed dean of the dental department of the University of Michigan a year ago last June and given a year's leave of absence, which he spent in closing up his work in the University of Berlin, where for some years he had been professor of dentistry. He was to assume charge of his work here with the opening of college this fall.

Dr. Miller was born in Alexandria, Ohio, about fifty-six years ago. He took his A. B. degree in Michigan University in 1875 and his degree of D. D. S. in Pennsylvania in 1878. As stated above, he was professor of dentistry in the University of Berlin. He was one of the most eminent men in his profession in the world and it was with the greatest reluctance that the German university permitted him to depart, though his own alma mater called him. The profession in this country was looking forward with pleasure to his coming. He wrote work on the Micro-Organisms of the Human Mouth, which was translated into a number of languages, and his work in dental surgery was remarkably successful. He was a man of strong physique and an enthusiastic golf player and seemed in excellent health when here recently. He leaves a wife and two children.



NECROLOGICAL

We mourn the loss by death of the following members of our profession:

Dr. Richard H. Reynolds, a dentist in Woburn, Mass., was drowned July 25, while swimming.

Dr. James G. Kenny, a dentist in San Antonio, Texas, died August 4 as a result of becoming overheated. He was 32 years of age.

Dr. Charles Burrows, a dentist who had practiced in Georgia and Florida, died recently in Nashville, Tenn., of tuberculosis. He was 38 years old.

Dr. Emmet E. Holden, a dentist in St. Paul, Minn., died August 8, following an operation for abscess in the ear. He was 58 years old and had practiced in St. Paul for sixteen years.

Dr. George Valck, a dentist in Houston, Texas, died in Fulton, Ky., August 10 from the effect of drugs. He was taken from the train while on his way to Chicago for treatment and died in the hotel.

Dr. George W. Lewis, a dentist in Philadelphia, died July 23. He was 26 years old and was a graduate of the Philadelphia Dental College Class of 1905 and was a member of Psi Omega Fraternity.

Dr. Charles L. Siegler, a dentist in Doylestown, Pa., died July 27. He was 62 years old and was born in Baden, Germany. In 1860 he entered upon the study of dentistry with Dr. A. J. Yerkes, and began practice in his own office in 1872.

Dr. Leon Ridgway, a dentist in Seattle, Wash., was found dead in his office July 16. Dr. Ridgway had lived in Seattle several years and was a member of Tabernacle Baptist Church. He was an '80 graduate of Philadelphia Dental College.

Dr. Anthony Varicle, a dentist in Seattle, Wash., died July 26. He was the inventor of the telegraph instrument which transmits handwriting and drawings, and a combination key used by the French Government in connection with time locks to all postoffice property.

Dr. James Oregon Dunn, a dentist in Chicago, died July 18. He was 32 years old and was a '97 graduate of the Chicago College of Dental Surgery. Dr. Dunn was a member of Psi Omega fraternity and received the degree of Ph. B. from the University of Chicago.

Dr. James A. Brookins, a dentist of Anderson, Ind., was instantly killed in an automobile accident at La Fountain, the auto in which he was riding being run down by a trolley. He was a '02 graduate of the Indiana Dental College and was a member of the Indiana State Dental Society.

PERSONAL AND GENERAL

Dixon-Kinsey.—Dr. P. A. Dixon and Miss Christina M. Kinsey, both of Roanoke, Va., were married July 30.

Barry-Walsh.—Dr. Walter F. Barry, of Orange, N. J., and Miss Anna E. Walsh, of Newark, were married in Newark July 29th.

Clinkscales-Blanchet.—Dr. F. M. Clinkscales, of Williamstown, La., and Miss Anna Blanchett, same town, were married July 11.

Dies in Dental Chair.—L. J. Richard, age 27, died in a dental chair in Canton, Ohio. Death was caused by effects of chloroform.

Dalton-Teehan.—Dr. T. F. Dalton, of San Francisco, Cal., and Miss Agatha F. Teehan, of Holyoke, Mass., were married in the former city in August.

Fire.—Dr. J. H. Dreher suffered a considerable loss by fire which partially destroyed the building in which his office was located in Wilmington, N. C.

Grand Opening.—A dental parlor in Grand Rapids recently "had an opening." The hours were from 4 to 6, music was furnished and souvenirs bestowed on each caller.

Wallace-Alderson.—Dr. A. A. Wallace, of Montrose, Colo., and Mrs. Ella E. Alderson, of the same city, were married May 29th and have just announced their marriage.

McCracken-Vander Linden.—Dr. James T. McCracken, of Charlotte, N. C., and Miss Margaret Vander Linden, of Pella, Idaho, were married in the latter place July 15.

Prominent Dentist Injured.—Dr. Gustavus North recently suffered a bad fall resulting in a fractured rib and a general shaking up. He is now so far recovered as to resume practice.

Dentist Insane.—Dr. C. M. Cody, a dentist in Sheboygan, Wis., was adjudged insane and committed to the Northern Hospital at Oshkosh. He is 36 years, and is a '92 graduate of the American College of Dental Surgery.

Vulcanizer Explodes.—Dr. G. W. Gibson had a narrow escape from death when his vulcanizer exploded at Michigan City, Ind. The doctor was in the act of bending over to inspect the thermometer when the explosion occurred, but escaped injury.

New Dental Board.—Governor Warner has appointed the following as members of the State Board of Dental Examiners: C. O. Oakman, Detroit, for five years; A. W. Hinille, Negaunee, four years; Addison B. Robinson, Grand Rapids, three years.

Must File Photographs.—The Pennsylvania State Examining Board requires each applicant to file a photograph, attested by the dean of the college from which he graduates. This rule was recently enforced for the first time.

Burglaries.—Drs. F. J. Quinn, Muskegon, Mich., loss \$25; F. L. Drake, Marquette, Mich., loss \$150; J. W. Kleeber, Oshkosh, Wis., loss \$10; W. H. Lind, Marshfield, Wis., loss not given; H. C. Carroll, Meadville, Pa., loss \$30; ———Smith, Meadville, Pa., loss \$30.

Removals.—Drs. W. H. Kercher, from Tremont, Ill., to Champaign; M. J. Dryer, from Little Rock, Ark., to Memphis, Tenn.; J. L. Baldwin, from Wheeling, W. Va., to Allegheny, Pa.; Steele McCreight, from Aledo, Ill., to Monmouth; E. G. Klacka, from Pittsburg to Springfield, Ill.; M. K. Moyer, from Conshocken, Pa., to Philadelphia; L. J. Tourtellot, from Anamosa, Iowa, to Enid, Okla.; ———McCloud, from Central City, Iowa, to Anamosa, Iowa; R. H. Burks, from Metropolis, Ill., to Asheville, N. C.; King Brooks, from Paducah, Ky., to ———Cal.; B. S. Gardner, from Dowagiac, Mich., to Gary, Ind.; H. A. Sprague, from Decatur, Mich., to Dowagiac; E. P. Brown, from Cottonwood Falls, Kas., to Roy, N. M.; J. F. Thompson, from Onalaska, Wis., to Minneapolis, Minn.; R. L. Spaulding, from Billings, Mont., to Helena; F. G. Chamblee, from Wakefield, N. C., to Hope; W. E. Naff, from Jonesboro, Tenn., to Greeneville; F. M. Robinson, from Port Huron, Mich., to Chicago, Ill.; F. B. Warvel, from North Manchester, Ind., to Anderson.

NECK BROKEN BY DENTIST.

George Davis, 38 years old, 32 West Madison street, died today at the county hospital from a broken neck, suffered while he was having a tooth extracted by a dentist.

The case, it is declared, is without precedent in the history of the hospital. Davis died after suffering an attack of paralysis in his right arm, and when an examination was made it was found that his neck had been broken. Efforts were begun at once by Deputy Coroner Davis to learn the identity of the dentist who treated the man.

Davis was taken to the hospital Monday night. At the time he complained of an injury to his neck, and he was closely questioned.

Felt No Pain at Time.

Dr. A. B. Eustace conducted the examination. The physician said: "Davis told me that he had had a molar tooth extracted by a dentist two weeks ago. He said it was a big tooth and that the dentist had trouble taking it out. The dentist was forced to jerk at the tooth several times before it was finally withdrawn, but at the time Davis declared he felt no pain in his neck. Later, he said, he suffered an attack of paralysis in his right arm and was troubled with a pain in his spinal column.

"The pain later went to the cords of his neck. I made an examination after he told me his story and found that his neck was broken.

and that the attack of paralysis and the pain in his spine was due to the injury. I was then convinced that the man's neck was broken while the dentist was jerking at the tooth, when he declared that he had not met with any accident and was unable to account for the injury except in the visit at the dentist's office.

Physician's Theory Confirmed.

Davis' body was taken to the county morgue, and, to determine the exact cause of death, Coroner's Physician Dr. Warren Hunter made a post-mortem examination. The broken neck was found.

Davis rallied for a time at the hospital, but later became unconscious and died without regaining his senses. The Desplaines street police were called upon to discover the identity of the dentist who extracted the tooth.—Chicago Journal.



Fig. 1.

860,555. Dental-Syringe Attachment—William C. Middaugh, Easton, Pa. Filed November 21, 1906. Serial No. 344,506. Claim.—1. An attachment for syringes comprising a needle-receiving sleeve, a rubber-holding head at one end thereof for surrounding a needle, and a spacing sleeve to receive the needle.

Fig. 2.

854,842. Artificial Tooth—Joseph Ramsperger, York, Pa. Filed November 8, 1906. Serial No. 342,520. Claim.—1. As an article of manufacture, an artificial tooth having a pin-receiving cavity therein, the inner end portion of which is enlarged, and a sheet metal lining against the side wall only of the enlarged portion of the cavity, the remaining part of the cavity being unlined, and the internal diameter of said lining being greater than the diameter of the unlined portion of the cavity.

Fig. 3.

856,034. Process of Manufacturing Fusible Dental Fillings, Inlays, and Crowns—John N. Crouse, Chicago, Ill. Filed March 14, 1906. Serial No. 306,081. Claim.—1. A process of manufacturing dental filling and crowning material which consists in mixing ground feldspar, siliceous, and one or more metal oxides; reducing them to a plastic condition by the addition of phosphoric acid and water; molding the paste thus formed to the tooth, and then baking and fusing the same.

Fig. 4.

861,356. Mouth-Wedge—Robert Buchfeld, Elberfeld, Germany. Filed May 18, 1906. Serial No. 317,623. Claim.—A mouth-wedge for opening the mouth of patients, comprising a pair of forceps having handles turned

upward and flat front parts, a front piece secured to each flat front part of the handle having a wedge shaped front portion somewhat reduced inwardly from the point of the wedge on which the teeth rest, a second portion integral with the wedge shaped portion extending beyond same and forming an inner surface adapted to act as a support for the front of the teeth when the device is turned up, and means for permanently setting the device when applied.

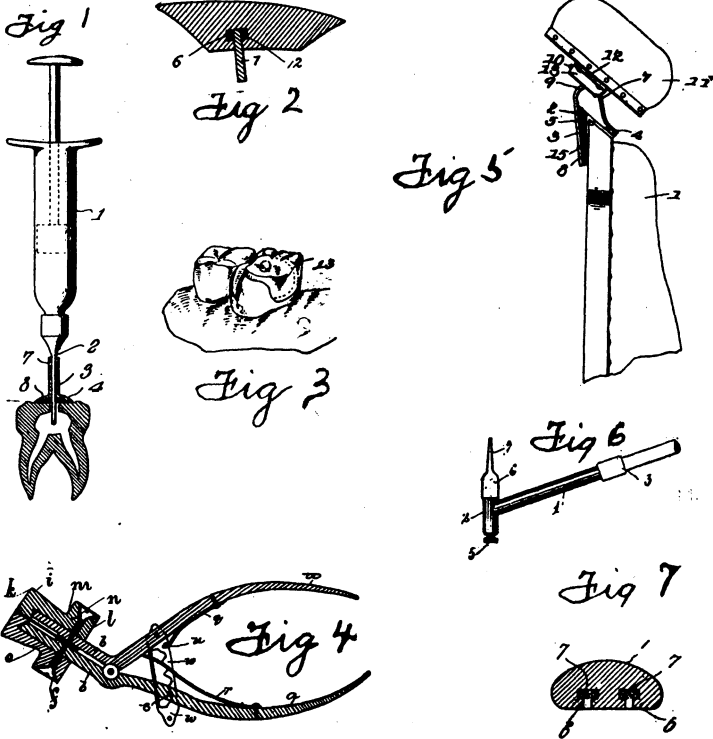


Fig. 5.

860,222. Head-Res for Chairs—James Mackey, Prescott, Ariz., assignor of one-half to Adoniram J. Head, Prescott, Ariz. Filed July 26, 1906. Serial No. 327,944. Claim.—1. A chair comprising a back, and a head-rest, in combination with a bracket comprising a base secured to said back and a rail formed integral with said base, said rail having an upwardly and rearwardly extending portion and a depending portion connected to the first by a bend, a slide supporting the head-rest which is adapted to be adjusted along the rail, stops at the ends of the rail, and means for clamping said slide in adjusted position on the rail.

Fig. 6.

881,270. Pneumatic Dental Cement-Injector—Henry L. Cruttenden, Northfield, Minn. Filed November 19, 1906. Serial No. 343,957. Claim.—1. In a dental cement injector, the combination with a tubular head and a pump bulb connected thereto, of a cement tube fitting telescopically on said tubular head, and having an attenuated discharge neck at its projecting end, substantially as described.

Fig. 7.

858,828. Artificial Tooth—Joseph Ramsperger, York, Pa. Original application filed November 1, 1905. Serial No. 285,417. Divided and this application filed February 12, 1906. Serial No. 300,654. Claim.—1. As an article of manufacture, an artificial tooth having a cavity therein, finely divided particles of metal embedded in the wall of the cavity and partly exposed within the cavity, and a pin inserted in said cavity and united to said finely divided particles by solder.

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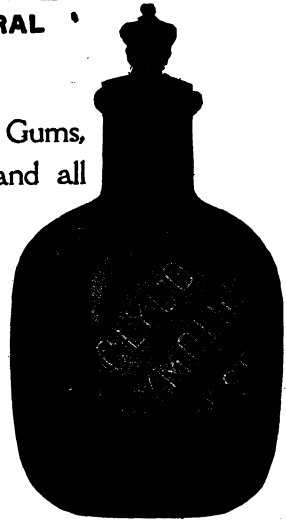
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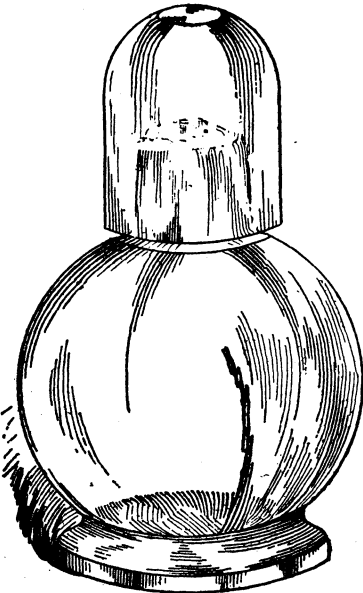
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